DOMESTIC ENGINEERING

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Suggestion:
Cut out; frame neatly; put in show window; change weekly.

IS A CUT PRICE SAFE?

Under certain circumstances, yes. If the prospective buyer is a judge of values he is safe in buying goods at cut prices in seasonable clearing sales by reputable merchants. But cut prices on plumbing and heating goods are unsafe because the prospective buyer is rarely a good judge of values, and as these goods are not of a seasonable character they are only offered under the specious guise of a low price that the seller may stimulate sales of unworthy goods. Catalogue houses and cheap plumbers and fitters should be given no consideration by the consumer, who, when economy, safety and comfort are concerned, should use only goods of high quality, bearing the maker's name and guarantee.

The Focus of the World's Interest

The most interesting spot in the world to-day is not the English channel where—if we may believe the so-called cable dispatches in the daily papers—the Britons stand in gibbering fear of German air-ships; it is not in the Mediterranean, where war has just been averted by the lowering of the Greek flag on the island of Crete; it is not in Spain, where Alfonso's throne has just ceased rocking; but it is in that little stretch of the globe's surface fifty miles long and five miles wide called the Canal Zone, where perhaps fifty thousand men are employed by the United States in work which will change commercial conditions which have existed for hundreds of years; which will turn the ships of the world out of channels their prows have cleft since Columbus' time, and head them into unfamiliar ways; which will divorce the trade connections maintained by the South American continent with European countries and mould them anew with the manufacturers of the United States.

* * *

When all is said the construction of the Panama Canal is an industrial step, and while its construction was probably hastened by the palpitating fear with which the citizens of this country watched the battleship "Oregon" steam around through the Straits of Magellan and safely reach Key West, still it is not the exigencies of war which has called the Panama Canal into being. Industrialism is the most potent factor in the world's movements to-day, and the Panama Canal is the most important fact in industrial development. Shortening of sea routes from the rapidly developing countries of South America so that New York, Savannah, Tampa, Mobile, and New Orleans will be many thousand miles nearer its important seaports than are Liverpool, Hamburg, Havre, and Barcelona, will have an impulse upon economic conditions which cannot be resisted. We are led to believe that the South American merchant is anxious to purchase goods from the manufacturers in the United States, but whether he desires to do this or not sentiment will bear no relation to the event, for the sea routes will compel him to purchase his goods in this market. The manufacturers of the United States have, in the main, been non-exporting people, but whether they desire to become exporters or not will not affect the ultimate result. They must dispose of their goods to the South American continent.

* * *

Naturally those enterprising spirits who earliest open their eyes to this trade development will gain the largest reward. I speak by the book when I say that all manufacturers of plumbing, heating and mill supplies who have built up any export business with European countries have had to pay in losses for the privilege of doing business abroad. The reason for

(Concluded on page 202)

Kitchens and Laundries

Their Planning, Arrangement, Equipment and Sanitation

By Wm. Paul Gerhard, C. E.

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CHAPTER II*

THE KITCHEN RANGE AND COOKING PROCESSES.

The most important furniture or apparatus of the kitchen is without doubt the cooking range. Indeed, of the many interior fittings of a house this is second to none in importance. For these reasons its consideration will be taken up somewhat in detail.

The word "kitchen range" designates an appliance or apparatus having a fire pot and grate, a top plate, one or two ovens and plate warmers, a water back, smoke flue, hood and other contrivances, intended for the cooking of food. In England the modern cooking ranges, having a closed fire, are sometimes called "kitcheners."

The purpose of a kitchen range is to provide a contrivance, which enables one to make the necessary fire and to generate the necessary heat for the proper preparation of the food by various cooking operations. These will be considered further on. Incidentally the kitchen range serves in many cases for the warming of the water used not only in the kitchen, but also in the laundry and in the bath and toilet rooms of a house.

Cooking and Heating Stoves Compared.—Comparing cooking with heating stoves, we find that they differ essentially in construction and in material, the difference being caused by the object for which the two are intended. We find that in heating stoves the enclosing walls are made thin, and of a good heat-conducting material, for the reason that the object of such stoves is to radiate heat to the surrounding air. Cooking stoves and ranges, on the other hand, are intended to hold the heat and to utilize the latter as far as possible before it escapes through the chimney flue. We, therefore, find all good cooking ranges constructed with linings of non-conducting materials and sometimes with double walls. Indeed, a cooking range which radiates much heat into the kitchen is rightly considered to be poorly designed or constructed. Kitchen ranges differ in the details of their construction according to the fuel to be burned in them (see chapter IV on Kitchen Fuels), according to special requirements, and also according to the customs of different countries.

Historical Notes on Kitchen Ranges.—In the earlier periods of history the means employed for cooking food were of the simplest and crudest kind. Before the advent of civilization, nomadic people prepared their warm food by building a pit lined with stones; in this a fire was made of wood and dried leaves and a pot was hung over the fire, being supported on a tripod of sticks. Sometimes cooking was done in a primitive way by filling a tight pit with water, which was made to boil by throwing heated stones into it. The use of pits was abandoned when earthen cooking vessels came into use. Meat was roasted on a spit over an open fire.

The old-fashioned kitchen of our forefathers had a very large open fire-place, in which the cooking pots were suspended on chains from a crane or pendant. Such open kitchen fire-places were in use in many countries. Likewise the roasting jack and the turn spit. Later on, the Dutch oven replaced the roasting spit; then followed the masonry ranges, formed of brick jambs and brick back, of considerable depth from front to rear, in which an open fire was made, and which were sometimes provided with a large hood to remove the smoke from the fire in place of the later smoke flue. The cooking vessels were placed in direct contact with the fire, and meat was roasted by supporting it on metal spits which were revolved by hand.

When the art of casting iron became improved, the open fire wood-burning ranges, which were very wasteful of heat, fell into disuse and were abandoned in favor of ranges with an iron top plate and with a closed fire. In these closed ranges, cast iron plates were used in place of brick for the jambs, a large side door was provided for putting in the fuel and an outlet for the smoke to the chimney flue was added.

When the use of coal as fuel became customary an oblong, deep fire box with a grate underneath was provided in the range. The fire box was lined with fire brick. The cooking plate on top of the range was made of cast iron and constructed with a number of round ring holes for the cooking pots of different diameter. Baking was first done in separate baking ovens and the baking and roasting oven, as we now know it was added later on, but when first so used, it required the building of a

*The first chapter in this series of articles was published in the issue of July 17, 1909.

separate fire. Other improvements consisted in providing a hot closet and a water back, and still later the ovens were ventilated and thus became better adapted for roasting. In place of flat grates, triangular bar grates were constructed, and the bars made to revolve. When it is desired to shake out the ashes the grate is merely rocked; it is turned over entirely only when clinkers are to be removed, or to dump the fire.

The first ranges, in which a single fire answered for the cooking plate, as well as for the oven, were made in France and became known as "French ranges," though at the present time the term is applied to designate a range, generally built of wrought iron, with a top plate having only a *single* hole in it, or sometimes no holes at all. The top plates of French ranges consisted of wrought iron, which was considered a material preferable to cast iron because it is more durable, does not crack and does away with many joints. The fire, which heated the top plate, was drawn by smoke flues in such a manner as to heat the top of the oven for roasting purposes. When it was desired to bake, a separate fire had to be built under the oven, but this construction was later on abandoned, and the flames and fire gases were made to travel by means of proper dampers from the fire box all round and under the oven before passing through the smoke flue into the chimney stack. In this way the heat from the fire became utilized to the best advantage.

In some countries, as for instance in Germany, even the modern ranges are constructed with sides built in masonry, only the top plate being of iron, while the ends or sides are lined with either tiles or marble. The majority of modern ranges, however, are built entirely in cast iron; sometimes the body is of cast iron and the top plate and oven of wrought iron. Such ranges are cheaper than masonry ranges; they are often made in portable form and are thus more readily transportable. For the sake of cheapening the cost of construction, the top plates were made of cast iron, but top plates of such material are more apt to crack and are quite difficult and costly to repair.

Cooking ranges may be set against a wall or chimney breast with the sides either free, when they are called "open-set" ranges or enclosed by brick jambs, when they are designated as "brick-set" ranges. In some cases, however, they are set entirely free in the middle of the floor, as for instance in kitchens of institutions.

All cooking ranges with closed fire require a large amount of fuel, unless the fire is very carefully watched. While they are convenient in some respects, they cannot be considered economical for the reason that much of the heat of the fire escapes into the chimney without being utilized.

Requirements of Kitchen Ranges.—The general requirements of an efficient and satisfactory kitchen range are: durability, convenience, ease of management, perfect heat regulation, economy in fuel, good design and good finish.

To go a little further into detail requirements: it is necessary that not only the chimney flue, but also the range should have a perfect draught. This draught and the fire should be perfectly controllable by special devices, such as dampers and checks, so that the heat of the cooking or roasting fire may be made greater or smaller at will, as may seem desirable. All parts of the range should heat up quickly. A well-constructed range should have ample oven space for roasting and baking; the ovens should be ventilated and capable of being heated more at the bottom than at the top for pastry and bread baking. A good range should also have facilities for broiling and grilling. There should be a sufficiently large top plate for doing the boiling, stewing and

"A Fine Pair to Draw to." Lest someone not long in this country should chance to observe this picture, it is Otto Hahn on the left, and Thos. Hazleton. From photograph taken by our Mr. Carson at the Pennsylvania Master Plumbers' convention in Wilkesbarre.

frying. The fire pot should be ample large to hold plenty of coal; the grate should not choke or fill up with clinkers and it should be so designed that it may be easily and quickly cleaned in order to keep a clean hot fire. There should also be a dust flue so that the ashes can be removed without causing dirt and discomfort.

Ranges intended to heat the water in the boiler must be provided with a water back of ample size and proportionate to the capacity of the boiler.

A good range should be economical in the use of fuel; it should be built of strong, durable and non-conducting materials, to avoid the loss of heat by radiation; it should not generate noxious vapors or smells.

The cleaning of a range is a matter of importance and is referred to further on under "Care of the Range." Its heat flues should be accessible, and all parts subject to wear or breakage should be easy to repair. The exterior design should be plain and without any superfluous nickel trimmings; it should be easily kept clean, bright and orderly. The height of the top plate of a range should be such as to make it convenient for the cook to work on; the old fashioned ranges were built much too low and caused a great deal of unnecessary stooping. The ovens should have either vertically hinged doors and automatic drop shelves, or else the oven doors should be hinged horizontally and made to drop down in front, thus forming a level shelf flush with the bottom of the oven; this is particularly convenient when the meat to be roasted requires frequent basting. A good range also generally has an open front grate for toasting, grilling and broiling.

Regarding gas-cooking ranges it may be stated that a good range should have an ample number of burners for boiling, and one or two simmering burners for stewing and for keeping dishes warm, also one extra large or double burner for quick cooking. The gas supply to the range should be ample and be capable of feeding *all* burners if kept going simultaneously. The range should have ample oven accommodations and a place for broiling. A vent flue is always necessary for gas ranges to carry off cooking odors from the ovens, and an additional hood over a gas range helps to remove the products of combustion.

To be continued. All rights of republication reserved.

Farmer Foddershuncks—Haow do them summer boarders of yourn keep busy?

Reuben Robbins—They play golf.

Farmer Foddershuncks—What'n Sam Hill's that?

Reuben Robbins—'S near's I kin figger, it's solitaire shinny.—Cleveland Leader.

The Pitch of Heating Pipes

By Charles B. Starkey.

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Some months ago down in Missouri the telephone bell of a certain heating shop rang viciously and the boss hastened to take down the receiver which spilled forth the following in pretty fair Missouri English, considering the circumstances:

"Say, Mr. Fitter, my steam job is heated up for fair and bucking like a circus mule. It pounds and hammers and knocks to beat the band. A boiler factory would be a joy forever in comparison. What in thunder is the matter with it anyhow, and how soon are you going to fix it?"

"Oh, that's all right," said the boss, "probably *some careless fitter left a pipe pitched wrong.* I'll be up tomorrow and see what the trouble is."

The following day he went up to the residence and found that three branches pocketed water because they were not properly pitched.

Pitch in Pipes Defined.

Pitch in reference to steam or hot water pipes simply means *that these particular pipes are not exactly level on a continuous run.* We say, "that main is pitched half an inch," which indicates that the main has half an inch fall in every ten feet of distance.

When the main *pitches to the boiler* the highest point in the main is generally (but not always) farthest away.

A main *that pitches away* from the boiler generally has its highest point directly over the boiler.

The pitch of a steam pipe is one of the most important factors governing the working of the apparatus.

Whenever one steps within a building and hears heavy sledge like thumpings coming from the steam job it is a four to one shot that some pipe or pipes are not pitched correctly and consequently hold, or "pocket water" which, laying in this depression of the pipe is the cause of the racket.

How the Hammering Takes Place.

When the steam first passes through the job the condensation is greater than it is after the system becomes warmed up. Consequently if the pitch is not correct any pockets along the lines will receive and hold water. The steam is forced through the mains and branches from the boiler and when it strikes one of these pockets the hammering results, because the steam crowds itself right into

the water and condenses rapidly thus forming a partial vacuum, which under these circumstances, cannot withstand nature's constant pressure of 15 pounds per square inch and so the partial vacuum is crushed, so to speak, and the hammering noise is thus produced.

The Proper Amount of Pitch.

Steam pipes should be so erected that with the given pitch they will clear themselves from all condensation.

The amount of pitch required to produce this effect seems to be rather undecided. Some authorities dodge, or omit the question entirely; others state to give the pipe as much pitch as possible.

The general practice among the craftsmen throughout the country is to put one inch fall upon the pipes to every ten feet distance.

This would be described as a "1 to 10" pitch regardless of whether the condensation flowed with or against the steam.

With that amount of pitch no job should pound or hammer provided the line is free from "pockets."

If the job does pound when so installed there is some other reason such as too small pipes, or the lifting of water into the mains by the too rapid steaming of the boiler or the water backing up in the returns. Mains can be successfully installed with very much less pitch than "1 to 10." Jobs have come under the writer's observation where the pitch was only ⅛ of an inch pitch in ten feet and at that the steam main was pitched toward the boiler; and *these jobs worked perfectly.*

So many different conditions occur in installing jobs that it is almost impossible to advise as to the proper pitch.

From actual practice, it would seem, however, that where it is possible, the steam main should be pitched away from the boiler and that the fall should be anywhere from ⅛ of an inch to 1 inch in each ten feet.

The Time and Method of Providing Pitch.

The pitch of mains should be estimated and provided for *before the boiler is set.* If this is not done it may be found, when the end of the main farthest away from the boiler is reached, that this point comes far too near the level of the water line, and then the deuce is to pay.

It should be remembered, that the far end of the main should always be at least 14 inches above the boiler's water line.

If this advice is neglected by the fitter, who is putting in the job, he is liable to wish that he had taken more pains to find out where he was at, when the job is fired up and the flooded mains and radiators get in their work.

Knowing the height of the water line (obtained from the boiler catalogue) and measuring the depth of the cellar and estimating the length of the main, the fitter is in a position to tell how much pitch is to be applied, and also whether or not the boiler will have to be set in a pit.

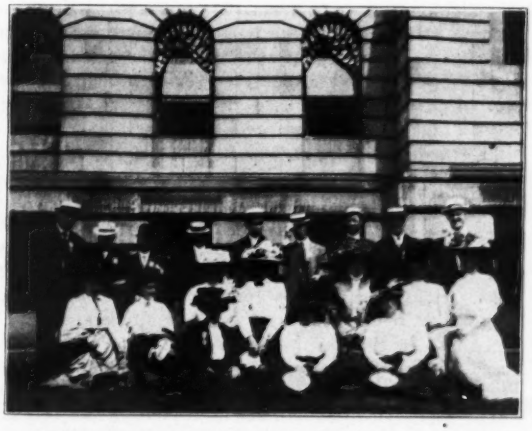
A main 60 feet in length with a "1 to 10" pitch would call for 6 inches fall. *Can the boiler be set on the cellar bottom, the main run at that pitch and still have the extreme end of it 14 inches above the water line?* If not, either take less pitch or sink the boiler.

Having decided the pitch it is easy enough to get it fairly accurate by cutting the hangers each one-half an inch, or one inch longer than the other, as the case may require according to the pitch desired. After the main is strung a spirit level can be adjusted to the exact pitch by setting a small screw on the under side at one end, and the main should then be carefully gone over and any kinks or pockets located and removed and the *exact pitch established.*

Pitch on Hot Water Mains.

It is stated by some authorities that a hot water main should rise as it leaves the boiler; that is it should pitch up from the boiler. Probably if some of these authorities had experimented a little they might have discovered a few other things in relation to circulation.

It makes no difference in a hot water main's cir-



"A Portion of the Buffalo Delegation." An imposing delegation was in evidence from Buffalo, N. Y., at the recent Detroit convention and, as usual, participated actively in the business that was transacted there. A portion of these delegates are seen here on the green, with their wives. Photograph by our Mr. Winslow.

culation whether it pitches up or down, from the boiler, provided only that the pitch is uniform.

Some of the best working jobs I have ever seen on hot water circulation had the main pitched away from the boiler and the main did not pocket air at the high point directly over the boiler. These jobs were on the open tank system and the radiators all warmed up perfectly and quickly.

In putting up a line of main it is totally unnecessary to use temporary hangers made of pieces of wood. They are in the way and are entirely unreliable, and are a sheer waste of all the time used in constructing them and tearing them out after the iron hangers have been installed.

The proper way is to put on the right pipe hangers at the very start and have done with it once and forever.

Running Water Pipe

By Phoenix.

After the main is tapped the water pipe should be run inside the cellar wall, if possible, before leaving the job, even though one might have to put in a little "overtime." It is much better so, than to leave the ditch open subject to possible showers and a cave-in, or to run the risk of some one falling in, with the result of a suit for damages on deck.

By using a little forethought **the water pipe can be all cut up at the shop** as far as the cellar wall, which would, under ordinary circumstances, mean one or two cuts and threads only, to bring the line inside this wall ending with the stop and waste; thus giving perfect control of the job, and the **remainder of the work all under cover.**

The plumber can remain in the ditch, his helper passing down the pipe from the bank and assisting in sending it home where full lengths are used. Fourteen and eighteen-inch pipe wrenches are the handiest for ditch work. They are plenty powerful enough for the size of pipe generally used in this service, which is ½-inch and ¾-inch galvanized.

The line can be dropped in and made up to the point where the service box is to be set in about fifteen minutes or less, depending upon the distance the pipe is to be laid. Then open up the stop cock and have the corporation cock turned on full head. Let all the chips and dirt blow out, after which close the stop cock only. Right here the test comes of the line up to the stop cock. If no leaks are found the ditchers may begin filling in the dirt just as soon as the pipe is secured around the corporation cock as explained in a previous article.

The journeyman should attend to setting the service box, because if left to the ditchers or helper it will nine chances out of ten be literally thrown in any old way.

In the first place this service box should be set upon some kind of a foundation. Flat stones will answer, but a few old brick will be found much better placed as shown in Figure 51, which also shows the cut-off. The box should be surrounded with brick or stone so closely packed that no dirt or mud will work in to cover up the cut-off cock making it impossible to catch it from above later on with the key. For this reason if a really first-class job is expected, these brick should be laid in cement and that portion of the service box be made entirely water tight. Before bricking up, remove the cover of the service box and **fit the key to the cut-off cock, making sure that all is plumb and that this cut-off cock can be quickly and certainly grasped by the key.**

"Horse Sense" grows by using gumption in absorbing hints

It may be worth many dollars some day to the owner of the building to be able to cut the water off quickly at this very point. It is well to so adjust the length of the service box that the cover will be about two or three inches above the surface of the ground. When securing the cover a few drops of oil placed upon the screw will prevent its sticking when it is desired to open up the cover at a later period.

After the service box is set plumb and foregoing matters properly attended to, some dirt should be thrown around the box and tamped down, after which the journeyman and helper can rush the remainder of the pipe line, speedily getting it laid to the point inside the cellar wall where the stop and waste will be placed. When putting in this second run of pipe the helper should stay upon the bank. A board laid across the ditch will keep the end of the pipe out of the mud or dirt until the journeyman can reach it, to make the proper connections. The couplings, or "knuckles" should all have been reversed and put upon the opposite end of the different lengths of pipe previous to their being used. This gives fresh good threads all around and saves time lost in monkeying around trying to catch bum threads. Many times a man is called upon to make a cut in the ditch in a ¾-inch, or possibly as large as 2-inch galvanized water pipe, for the purpose of putting on more house services; the larger mains being located too far away for practicable tapping.

If the galvanized pipe is in sound condition a three-wheel pipe cutter can be used and a section about two feet long of this galvanized main cut out. If a joint fortunately appears at this point it may be used with advantage. Should the pipe appear soft or somewhat rotten, a hack saw will do a better, though slower job. In putting threads upon the pipe remaining in the ditch a ratchet stock is best, but not entirely necessary.

The pipe should be prevented from screwing in, while cutting these threads, by a wrench braced against the side of the ditch. If the pipe is merely ½-inch or ¾-inch it can be sprung out of line sufficiently so that the

new pieces can be made up, after which the faces of the union will just touch when it is desired to couple up. On larger pipe it may be necessary to cut a running thread using a lock nut to make tight, and screwing up the first piece to the extent of the running thread in order to make room for the second piece, and afterwards backing off piece number one until the two pieces face up, following with the lock nut and packing to make tight.

Sometimes it is desirable to lower a four, six or eight-inch street main. **This can be done without shutting off the pressure or cutting the main.** The only inconvenience is merely closing down the corporation cocks along the line, and cutting loose the house service. The ditch should be dug to the bottom of the main, and then shoulders or pedestals of dirt left under every hub, the ditch between each hub being dug as deep as it is desired to go. Then the diggers can be strung along the ditch one at each hub, letting the main down slowly by digging away the dirt left under the hubs about two inches at each lowering of

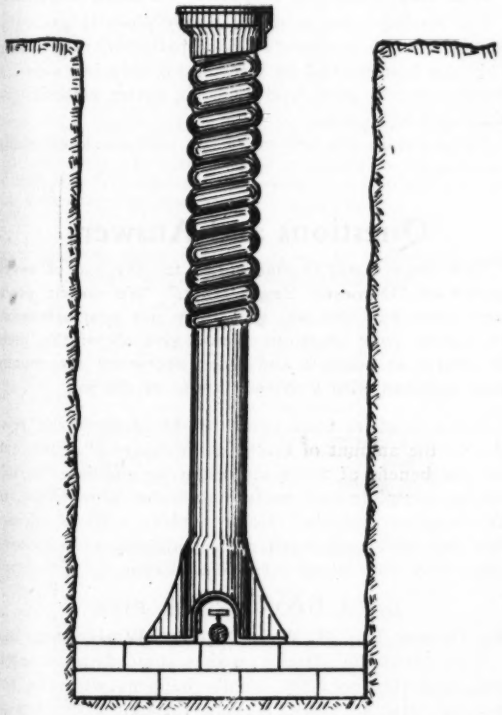


Fig. 51. Method of locating service box upon a safe foundation. It would also be desirable to close up the opening through which the cut off is seen.

the main. The weight of the main and water still in it will force the main to fololw the dirt and the whole line for several blocks at a stretch may be lowered in this manner.

Of course two or three joints will be sprung a little and leak some, the pressure being on full head, but the lead still remains in the hubs and these leaking joints can be easily and quickly stopped by hammering down the lead in them home once more. Then the water services may be spliced in again and the plumber's part is done.

When the journeyman is ready to run the water pipe in the cellar and to the various fixtures in the house it is best to look the cellar over and ascertain the safest manner to lay out the lines.

Safety should not be sacrificed for distance in order to reduce cost, for one freeze up and the resulting

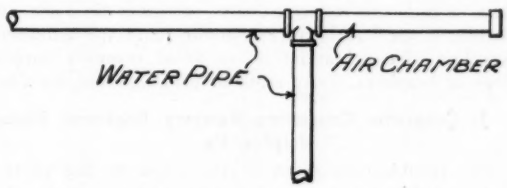


Fig. 52. In turning a corner at the end of a long run of water pipe it may not be amiss to put on an air chamber after fashion shown above.

split pipes will cost much more than a few feet of extra pipes.

Avoid the cellar windows and doors, and keep, if possible, four or five feet away from the outside wall. The pipe should be reamed from the point where it leaves the corporation cock up to the connection of the last faucet. Sometimes pipe which is not reamed produces a very unpleasant singing noise, much to the annoyance of the occupants of the house. The pipe should be fastened securely everywhere and in such a fashion that it will be impossible for it to vibrate, and on horizontal runs a slight pitch should be given the pipe toward the stop and waste.

Do not use any dope or similar composition in making up the joints. Lard oil is sufficient. No first-class workman requires any dope to make the joints tight. Sometimes, at the end of a very long run in the cellar, where a turn is made similar to Fig. 52, it is well to put on an air chamber. A 6-inch nipple and cap will answer for this purpose, and serve for an air cushion, enabling the water to get around the corners in an easier fashion.

Avoid the use of the street ell entirely. It is a bum fitting at best and four out of five used will result in a leak, as they are seldom threaded and tapped correctly. The cross-over is another fitting which should be used as little as possible for it is generally not the full size inside of the pipe to which it is connected. Many times cross-overs are nearly filled up with irregularities which cut down the flow of the water.

"Friend? O, No! Mother-in-Law."

"Are you a friend of the prisoner?" Magistrate O'Connor asked a buxom woman witness in the Central street police station court yesterday.

"No, I'm his mother-in-law," replied the woman, without any particular show of feeling.—New York World.

Sound Travel in Pipes

Among the many answers received in regard to the unpleasant hissing noise in water pipes heard all through the building when a faucet is opened are the following, which we now publish:

Oswald B. Franz, Department of Health. New York, N. Y.

It appears that the trouble in this case is largely due to high pressure. A house tank with individual lines for stacks and all fixtures air chambered would serve. Also a pressure reducing valve on main line and air chambers upon all fixtures should abate the nuisance. Another wise precaution is to avoid trapping supply lines or branches, loose seats or packings and the like.

J. J. Cosgrove, Consulting Sanitary Engineer, Philadelphia, Pa.

The troublesome noise in the pipes is due to the fact that his supply pipe is improperly proportioned for the work it must do. It is too small. This is a common source of annoyance where the water supply is not given the consideration to which it is entitled, and invariably leads to a similar nuisance. Packing in mineral wool will not be necessary if the system is rightly proportioned. I cannot state what size of pipe would be required from the meagre data at hand, but would caution against going from one extreme to the other.

Thos. M. Landers, Inspector of Plumbing, Richmond, Va.

I would first recommend that a water regulator be used on the main water supply in the basement of the building; also that all the faucets over the fixtures be of compression make. As to the sound of the water flowing through the soil pipes, I would recommend that they be packed with mineral wool or some other deadening substance, which would prevent that trouble. I had a similar case myself some time ago and I remedied the difficulty in the way above described. I find in many instances where Fuller or self-closing cocks are used over fixtures there are many complaints similar to the one in question, caused by the high water pressure and the quick closing cocks.

Robt. C. Lempke, Inspector of Plumbing and Drainage, Saginaw, Mich.

We all know wood, earth, metals and water are conductors of sound and it is commonly known that a water pipe suspended from the joists in the cellar is annoying from the rush of water through the pipe touching the wood when some fixture is in use. Some fixtures cause more noise than others, viz.: a bibb partly open, or a closet tank almost full. The valve is partly closed or something loose in a valve or bibb will greatly increase the sound in the building, or a nozzle on the end of a hose will cause much more sound than will the full flow of the hose without a nozzle. So if your correspondent will select fixtures with good free waterway of good construction and keep the pipes away from the wood work, he will do a great deal towards eliminating the annoying sound we so often get in plumbing. I always favor a large supply pipe and cannot see where the benefit would be in running to the top of building then dropping down. The only benefit I can see in boxing pipes would be to keep them away from the wood. I remember an experience I had one time with a leak in a water pipe. I had a complaint of a loud noise in and around the water pipes. After carefully looking and tracing out all pipes and fixtures I found them all right. I shut off the stop just inside the cellar wall and the sound stopped immediately. After digging up the pipe and finding a leak in the lawn, I was convinced that water is the greatest conductor of sound we have in plumbing.

Chas. H. Dawson, Bellevue, O.

Regarding the "Sound Travel in Pipes," I came across an interesting instance the other day. A closet tank made a fearful noise when filling, which could be heard 60 feet away. The line also ran to the barn where there was a faucet which when taken apart was found to contain a small piece of stone about the size of a pea. The red leather gasket was also slightly spread. I cleaned the faucet and pared down the gasket and the trouble was corrected.

Wm. Hey, Plumbing Inspector, Portland, Oregon.

The hissing noise in water supply pipes is generally caused by high pressure or poor ball cocks and bibbs. This can be remedied by installing a reducing valve, if the pressure is great, and by using better material for bibbs and ball cocks.

The noise in the soil pipes can only be avoided by covering.

Questions and Answers

This Department is maintained for the use of every reader of "Domestic Engineering." We solicit problems from you and will give them our best attention. In stating your questions please give all of the facts as clearly as possible and when necessary accompany your question with a correct layout of the job.

Many inquiries have come to this department relative to the amount of discharge from sewer pipes, and for the benefit of those interested we publish the following complete and useful tables by Thos. Tait, of Washington, Indiana. Many readers will, no doubt, find this table sufficiently interesting to paste up over their desk for future reference.—**Editor.**

DATA UPON SEWER PIPE.

By Thomas Tait, H. V. S. Engineer, Washington, Ind.

Very often the plumber wishes some data on sewer pipe, and this occasion usually happens when he has not the time to spend looking through a number of catalogues before he finds what he wants. This article is prepared for ready reference, and will be found very useful. In some parts of the country, sewer pipe is called "iron stone pipe" and "crock pipe." The ordinary commercial vitrified salt glazed sewer pipe is made in "standard" and "double strength" as shown in table below. Three to eight inch pipe is made in two foot lengths, and from eight to thirty-six inch in three foot lengths. The three foot lengths will save considerable time in laying sewer and also be saving in cement.

DISCHARGE OF SEWER PIPES FROM 4 TO 20 INCHES IN DIAMETER ON A GRADE OF ONE FOOT IN 100 FEET.

Diameter of Pipe In Inches.	Discharge in Cubic Feet per Second.
4	0.16
6	.49
8	1.11
9	1.53
10	2.05
12	3.49
15	6.29
18	10.37
20	13.85

DOUBLE STRENGTH SEWER PIPE.

Size of Pipe.	Depth of Socket In Inches.	Thickness In Inches.	Annular Space In Inches.	Approximate Weight Per Foot.	Approximate Feet Per Car Load.	Area in Inches.
12	3	1	½	46	540	113.09
15	3	1 1/4	½	65	385	176.71
18	3	1 1/2	½	95	260	254.46
20	3	1 11/16	½	123	200	314.16
24	3	2	⅝	175	140	452.39
27	4	1/8	⅝	236	110	572.55
30	5	2 1/4	⅝	250	100	706.85

The intention of this article is to treat on the sizes commonly used, and for this reason some sizes have been omitted. The next table will be of benefit to the plumber in determining the proper size sewer to install for a given job, with carrying capacities at various grades.

SIZE SEWER PIPE TO CARRY RAIN WATER FROM ROOFS WITH AVERAGE RAINFALL.

Size Pipe.	¼" per Foot Fall in Sewer.
5"	3,700 Square Feet of Roof Surface.
6"	5,000 Square Feet of Roof Surface.
7"	6,900 Square Feet of Roof Surface.
8"	9,100 Square Feet of Roof Surface.
9"	11,600 Square Feet of Roof Surface.
	½" per Foot Fall in Sewer.
5"	5,500 Square Feet of Roof Surface.
6"	7,500 Square Feet of Roof Surface.
7"	10,000 Square Feet of Roof Surface.
8"	13,600 Square Feet of Roof Surface.
9"	17,400 Square Feet of Roof Surface.

STANDARD SEWER PIPE.

Size of Pipe.	Depth of Sockets In Inches.	Thickness In Inches.	Annular Space In Inches.	Approximate Weight Per Foot.	Approximate Feet Per Car Load.	Area in Inches.
4"	1¾	5/8	¼	6	6,000	3.14
6"	1¾	5/8	¼	8	3,500	7.07
8"	1¾	5/8	¼	9	2,500	12.57
9"	1¾	3/4	⅜	13	2,000	19.63
10"	2	3/4	⅜	16	1,600	28.27
12"	2¼	13/16	⅜	22	1,000	50.27
15"	2½	7/8	⅜	28	800	63.72
18"	2½	15/16	⅜	34	700	78.54
12"	3	15/16	½	38	550	113.09
15"	3	1 1/8	½	63	420	176.71
18"	3	1 1/4	½	84	380	254.46
20"	3	1 3/8	½	99	320	314.16
24"	3	1 1/2	⅝	129	200	452.39
27"	4	1 5/8	⅝	146	120	572.55
30"	5	1 3/4	⅝	161	100	706.85

GRADES PER 100 FEET AND THEIR SQUARE ROOTS.

Grade per 100 Feet, in Feet.	Grade in Inches, Approximately.	Square Root of Grade.
0.04	½	0.200
0.05	⅝	0.224
0.06	¾	0.245
0.08	⅞	0.283
0.09	1	0.300
0.10	1⅛	0.316
0.12	1½	0.346
0.14	1¾	0.374
0.16	2	0.400
0.18	2¼	0.424
0.20	2½	0.447
0.25	3	0.500
0.30	3⅝	0.548
0.35	4¼	0.592
0.40	4¾	0.632
0.45	5⅜	0.671
0.50	6	0.707
0.55	6⅝	0.742
0.60	7⅛	0.775
0.65	7¾	0.806
0.70	8⅜	0.837
0.75	9	0.866
0.80	9⅝	0.894
0.85	10¼	0.922
0.90	10¾	0.949
0.95	11¼	0.975
1.00	12	1.000

Increasers, reducers, junctions and branches are made in two foot lengths. Curves and slants are made in one and two foot lengths.

CARRYING CAPACITY OF SEWER PIPE IN GALLONS PER MINUTE.

Size Pipe.	1 In. Fall in 100 ft.	2 In. Fall in 100 ft.	3 In. Fall in 100 ft.	6 In. Fall in 100 ft.
3	13	19	22	32
4	21	38	47	66
6	75	105	129	183
8	153	216	265	375
9	205	290	355	503
10	267	378	463	755
12	422	596	730	1,033
15	740	1,021	1,282	1,818
18	1,168	1,651	2,022	2,860
24	2,396	3,387	4,155	5,874
27	4,407	6,211	7,674	10,883
30	5,906	8,352	10,223	14,298
36	9,707	13,769	16,816	23,762

Size Pipe.	9 In. Fall in 100 ft.	12 In. Fall in 100 ft.	24 In. Fall in 100 ft.	36 In. Fall in 100 ft.
3	40	46	64	79
4	81	93	131	163
6	224	258	364	450
8	460	527	750	923
9	617	712	1,006	1,240
10	803	926	1,310	1,613
12	1,273	1,468	2,076	2,554
15	2,224	2,464	3,617	4,467
18	3,508	4,045	5,704	7,047
24	7,202	8,303	11,744	14,466
27	13,257	15,344	21,711	26,622
30	17,714	20,204	28,129	35,513
36	29,284	33,722	47,523	58,406

In closing this article would call attention to the fact that cement from joints on the inside of pipe will interfere with the free flow of sewage and is apt to cause stoppages, and for these reasons, careful attention should be paid to removing superfluous cement during the installation.

A LACK OF PLUMBING REGULATIONS.

190. Lancaster, Pa.—To the Editor of "Domestic Engineering." Sir: We have no laws governing our plumbing. The State Board of Health has ordered the cities to build a storm and sanitary sewer, with no provision to govern the construction of storm sewer from street to rain conductors, leaving it to the plumber or would-be plumber.

One square in this city requested the city to build them a street sewer. They would not, but gave them permission to build one. At cross streets they built a manhole and run both sanitary and storm sewer, one on top of the other, into it—the old sewer system. I

claim such a system is detrimental to the health of the property owners.

The city compels them to enter the storm sewer which I think is wrong, not having an independent sewer. Having trap at curb with fresh air inlet on storm sewers only helps to evaporate the water in the trap and permits sewer gas to enter rain water conductors and then the house. I proposed leaving the rain conductor in yard connected to the sanitary sewer until they put the storm sewer in throughout the city. Am I right? Respectfully yours. **W.**

Your city does not seem to be acting wisely in requiring separate systems of sewers for sewage and for storm water until it is able to carry out the construction in a systematic manner. To erect here and there a length of storm sewer, which must, of course, have its temporary outfall in some portion of the main sewer system, seems a wasteful and unnecessary procedure. We, however, see no serious objection to the presence of a running trap at the base of rain water leaders, if the city requires it, but we would not object to the omission of such traps. Sewer gas, should it enter rain water leaders, would be diffused into the atmosphere at the eaves and is harmless.

Some day enlightened sanitary sense will do away with all obstructions in drains and ventilate the sewers in the only practical way to render them inodorous—through the house drains and soil pipe stacks.

WAS IT PLUMBING OR STEAM FITTING?

What The Law Decides.

189. Washington, D. C.—To the Editor of "Domestic Engineering." Sir: Much interest has been manifested by the plumbing and heating trade in this city over a case of whether certain connections of a boiler could be considered plumbing or steam fitting, the Washington, D. C. plumbing department having brought the case to trial. I give herewith the decision in the case of the Court of Appeals, the decision of the police being reversed. **B. F. J.**

"Brooklynites." They will be recognized by many as prominent members of the plumbing trade from Greater New York. The picture was taken by our Mr. Winslow at the recent Detroit convention.

In the Court of Appeals, District of Columbia.

Marion L. Garrison,
Walter Edwards,
Plaintiffs in Error,
vs. District of Columbia.
No. 1851

This cause came here on writ of error from the Police Court of the District of Columbia. The plaintiffs in error, defendants below, were convicted upon information charging that they, on the 1st of November, 1907, within the District of Columbia, "did then and there perform certain plumbing work, without first obtaining a license so to do, or being in the employ of a licensed master plumber, to wit: made connection of hot water heater and boiler for heating water for domestic purposes in Congress Hall Hotel, contrary to, and in violation of, the Act of Congress, approved June, 1898, and constituted a law of the District of Columbia."

It is conceded that the defendants were not master plumbers, or in the employ of a licensed master plumber. It appears that the defendants were in the employ of one whose business it was to manufacture and sell apparatus for heating and supplying water for domestic purposes. The apparatus here in question consisted of a boiler and tank, which was installed in the Congress Hall Hotel in the City of Washington, at the time the building was in course of construction. The boiler and tank were disconnected in order that they might be moved conveniently to the building where the apparatus was to be installed.

The defendants were employes of the party furnishing the heater, and were sent by their employer to set it up. In order to accomplish this, they were required to connect two short pipes extending between the boiler and tank.

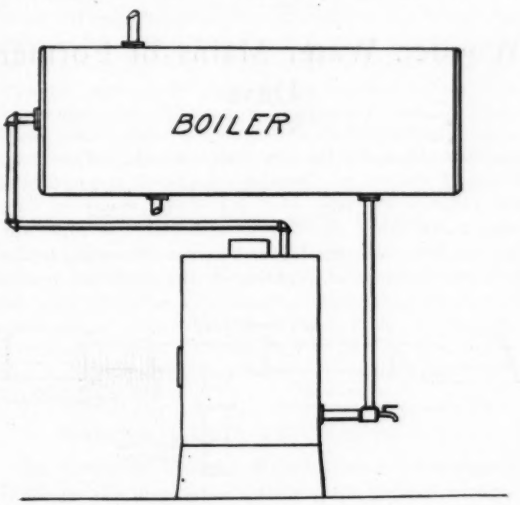
At the trial, a number of master plumbers testified as witnesses for the District to the effect that the work performed by the defendants in connecting the two pipes constituted plumbing work. The employer of the defendants testified "that the tank and boiler were connected on the premises of the Congress Hall Hotel building only because it was too large to be moved there if it had been connected in his shop; that the men did not connect the apparatus to the water pipes or service, as he had simply sold it to the hotel company, and connected the tank and boiler as above stated; * * * that the apparatus, when connected together by the said pipes, constituted a heating device for supplying hot water for domestic purposes, which it is his business to manufacture and sell, and of which he invented certain improvements." The record further discloses that "each of the defendants thereupon testified that neither of them had connected either of the tanks with the water pipes or service of the building."

Plaintiffs in error rely upon the following assignments of errors: "1. The court erred in ruling, in effect, that it was sufficient to charge in the informa-

tion under the statute, that the defendants did 'perform certain plumbing work.' 2. In ruling, in effect, that the mere connection of the boiler and tank, while neither was connected with the water pipes or service, nor with any water main, was engaging in the work of plumbing under the circumstances. 3. In receiving the opinions of witnesses that the acts of the defendants were plumbing."

We think a consideration of the second assignment of error will be sufficient to dispose of this case. The prosecution was based upon section 5 of the Act of Congress of June 18, 1898, (30 Stats. 477,) being an "act to regulate plumbing and gas fitting in the District of Columbia." The section is as follows: That it shall be unlawful for any person to engage in the work of plumbing or gas fitting in the District of Columbia, unless he is licensed as provided in this Act, or is an employee of a licensed master plumber." The evidence clearly discloses that the boiler and tank, which were connected in this instance, constituted, when joined together, a single heating apparatus. It was a device manufactured by the employer of the defendants. It is not contended that the employer was a plumber or engaged in the business, and the record does not show that the defendants were either plumbers or engaged to do plumbing work. All they did in this instance was to set up the heating apparatus, which consisted solely of properly locating the heater in the building and connecting the two pipes between the boiler and tank.

The object of this statute is to prevent unlicensed persons from engaging in the work of plumbing. It is in the nature of a police regulation for the protection of the public health. Being a penal statute, it must be considered liberally in favor of the defendants, and strictly against the government. In Mackall vs. District of Columbia, 16 App., D, C., 306, the court, considering the effect of the statute regulating the sale of intoxicating liquors in the District of Columbia, said: "At the same time the law must be given a reasonable interpretation; an unreasonable interpretation would only serve to bring it into discredit, and would thereby ultimately thwart the laudable purposes of the law makers. * * * It is well settled law that every word of the statute is to receive effect and be construed according to its ordinary and natural signification, and the strict letter is not to be departed from without giving a sufficient cause; but it may be required as equally well settled law that, when a thing is not within the meaning and purpose of the statute, although perhaps within the strict letter, it will not be construed as included in the enactment." Applying this construction to the case at bar, we think that the statute would not embrace the mere connecting of the parts of the heater that ultimately may form a part of the complete plumbing system of the building. If the contention of the corporation counsel should be sustained, it might lead to unlimited abuse. If the employer of the defendants could be prevented by this law from sending men in his employ to connect the parts of this heater in the hotel building, the law would likewise prevent the performance of the same work at his factory or shop before being removed to the building to become a part of its plumbing system. Followed to its logical conclusion, no one would be allowed to manufacture a heating device in which the parts were connected by pipes, without first securing a plumber's license. In setting up this heating apparatus, defendants did not attempt to connect it with the water pipes, or with the service of the building, or with the water mains. This was left to the persons charged with doing plumbing work on the



Tank and pipe connections on which the law suit took place in Washington, D. C.

building. We are of the opinion that the statute will not admit of so narrow a construction as is sought to be placed upon it by the corporation counsel, and that the police court erred in rendering judgment against the defendants.

The judgment of the police court is reversed, with costs, and the cause remanded with instructions to proceed in accordance with the views expressed in this opinion.

Reversed.

(Signed) **Joshua A. Van Orsdel.**
Justice.

WHAT SHOULD BE THE PROPER LENGTH OF THIS TUBE?

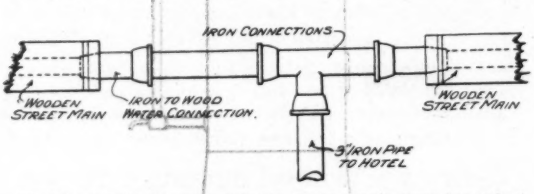
188. Memphis, Tenn.—To the Editor of "Domestic Engineering." Sir: I would like to ask you how far down into the boiler the cold water tube or feed pipe should be permitted to extend. Some people I know contend that twelve inches is enough, while others say it should run to within four inches of the tank's bottom. Please answer. **J. E. B.**

We believe that the tube should be more than twelve inches long as this length would seem to allow a short circuit of cold water from the supply into the hot water at the top of the tank and thus draw cold water from the hot water faucets. The tube should be long enough to pass it well down through the hot water, but never below the level of where the flow pipe from the water front enters the side of the boiler.

If water is then siphoned from the boiler it cannot be lowered below the end of the cold water tube and the water back will remain full. At the top of this tube, a hole should be punched having a capacity of at least 25% of the area of the supply tube. This hole will prevent the siphoning of the boiler below the point where it is punched, unless the hole becomes stopped up, which is sometimes the case. We should like to hear from some of our readers upon this subject.

Wooden Water Mains of Former Days

On Thursday, July 29, some workmen, while making excavations for the new Chicago and Northwestern Railroad station in Chicago discovered some of the old cedar wood pipe used for water mains in Chicago many years ago. It is said that this pipe was laid in 1841 and the 350 feet or more removed was well preserved, after reposing in the earth for nearly



Sketch showing how a wooden water main was tapped at South Bend, Ind., in 1898.

three-quarters of a century. It ran in an alley in the rear of the old Gault house, the line extending from Madison to Washington street. The lengths were about ten feet long, and from twelve to sixteen inches in diameter, with about a three-inch bore. They were coupled together with a wooden coupling about one foot in length. This coupling was tapered off

Interesting relics of other days in Cincinnati, Ohio. These specimens of early water pipes are reposing in the museum of the Queen City's fire department.

slightly at the ends and fitting into the corresponding tapered hole in the end of the wooden water main. It was simply driven up to its place, and when "home" the ends of the water pipe were about three inches apart.

When it was desired to tap this wooden main, the water was shut off and an augur hole was bored in the wood, until the water was reached, after which the corporation cock was screwed in and the lead water service pipe to the building was then run. In the drawing given, we reproduce an iron to wood splice made on a wooden water main in South Bend, Indiana, in 1898. This main of wood was then said to be standing a pressure of seventy pounds. The iron to wood reducers will be noticed in the drawing and these were made specially for the purpose. The iron pipe leading from this wooden main supplies the Oliver Hotel of South Bend with water.

In the museum of the Fire Department at Cincinnati, Ohio are preserved some very interesting examples of the earlier days of domestic engineering in the Queen City. These wooden water pipes were simply, as in many other cases, the trunks of trees having a small hole bored in them through which the water passed. What appears to be an old-time hydrant is also found in this curious collection, as a glance at the left in the accompanying illustration will show.

Note.—For some of the facts contained in this article we are indebted to F. L. Hays, Jr., 37 Dearborn street, the Chicago representative of the H. Mueller Manufacturing Company, of Decatur, Ill.; and C. P. Hulbert, of the plumbing firm of Hulbert & Dorsey, 211 E. Randolph street, Chicago.

The Master Plumbers' Forum

BUSINESS BRAINS NEEDED MORE THAN "PROTECTION."

Seattle, Wash.—To the Editor of "Domestic Engineering." Sir:—I am pleased to see that you are urging a more modern and sane view of the powers, duties, objects and methods of plumbing associations and organizations of master plumbers than has been the rule in the past.

I think that the communication from Father Stritch is remarkably clear and points the way toward a solution of many of our troubles. Many of us have been clamoring for "protection" when in truth we have had more "protection" than was good for the plumbing business as a business or as a trade. Most of us need business brains more than we do "protection" and time after time in the past when we have had "protection" we abused it and used it as a means or method, bluntly speaking, for what practically amounts to extortion.

I was especially pleased to see the short article from your editor, Jno. K. Allen, in a number issued just prior to the recent National Convention in which he questioned as to whether much better results would not have been attained many years ago had the association devoted the time and energy given to securing "protection" to (what now seems the necessary step of) business education for the master plumber.

I think, and I believe, that most of us have come to realize, that our greatest need is not more protection but better business methods.

Yours truly, **Wm. E. Holmes.**

MANUFACTURERS PLANNING MANY IMPROVEMENTS

Two Million Dollars to be expended on Additions and Extensions to Tube Plant at Lorain, O., operated by Nationa! Tube Company.

Roderick P. Curtis, President of the Curtis & Curtis Co., Bridgeport, Conn., passes on.

NATIONAL TUBE CO.'S BIG EXTENSIONS.

An appropriation of $2,000,000 to cover additions and extensions to the tube plant operated by the National Tube Company at Lorain, O., has been authorized by the finance committee of the United States Steel Corporation, says the Cleveland Leader. To increase the finishing capacity of this plant a skelp mill will be added as well as two butt-weld mills for the manufacture of wrought steel pipe. It is probable also that the pig iron and steel capacity will likewise be extended to cover the increased requirements of the finishing departments. This announcement is unusually interesting in view of the reported break in the negotiations that have been pending for the sale of the extensive properties of the Republic Iron & Steel Company to the United States Steel Corporations. For a year the Republic Company has contemplated the invasion of the wrought steel pipe and tube manufacturing field, largely dominated by the National Tube Company. To this end the Haselton Tube Company was organized by Cleveland, Youngstown and New York capitalists largely interested in the Republic Company. The plans provided for the erection of a modern, electricity driven pipe and tube mill at Haselton, near Youngstown, where the Mahoning valley pig iron producing capacity of the Republic Company is centralized. Pending negotiations for the sale of the Republic Company's properties to the United States Steel Corporation, it is reported, the erection of the Haselton plant was held in abeyance. However, as soon as these negotiations were declared off, contracts were immediately placed by the Haselton Tube Company with the McClintic-Marshall Construction Company at Pittsburg for the buildings, and bids are now being received and awards will shortly be made for the necessary equipment. The Republic Company for several years found a ready market for the sale of the skelp produced by the Youngstown Sheet & Tube Company. This latter concern, however, is now producing its own skelp and thus has forced the Republic Company to seek another outlet for this material, which is largely produced at the Brown-Bonnell plant at Yerington. That the Steel Corporation intends to maintain its control of the pipe business is indicated by its decision to make large additions at Lorain and thereby fortify itself to meet threatened competition. In this connection it is interesting to recall the invasion of the pipe and tube manufacturing field by Andrew Carnegie nearly 10 years ago, which subsequently led to the formation of the United States Steel Corporation.

R. P. CURTIS PASSES AWAY.

Roderick Perry Curtis, president of Curtis & Curtis Co., Bridgeport, Conn., died last Tuesday as the result of an automobile accident. Mr. Curtis was forty-nine years of age. The funeral was held on Thursday and was attended by large delegations of friends from the Masonic order, the Brooklawn Country Club, the Algonquin Club, Bridgeport Yacht Club, Seaside Club, Society of Sons of the American Revolution, New York Yacht Club, and other organizations of which Mr. Curtis was an honored member.

ERECTING TWO NEW KILNS.

The Great Western Pottery Company, of Kokomo, Ind., is building two new kilns at its plant in this city, and it is planning an extension to its clay shops and a new large glost warehouse. This company has experienced so good a season that it has found it necessary to increase its production to take care of its new business.

MAKING LARGE IMPROVEMENTS.

The Abingdon Sanitary Manufacturing Company, of Abingdon, Ill., has experienced such a fine run of business that it has found it necessary to increase its capacity; with this end in view it has just awarded contracts for the erection of two new buildings, 60x170 feet, and two new kilns to be ready for use September 15, 1909. These improvements will cost $15,000.

ERECT FOUR NEW KILNS.

The Fords Terra Cotta & Pottery Works, of Perth Amboy, N. J., has recently completed the erection of four new kilns which will increase that company's output of sanitary earthenware from fifty to sixty per cent. A new product in the form of a new oval lavatory, 23x22 inches, designed especially for apartment house work has been added to its line. This concern maintains a sales office at 231 Pearl street, New York City, in charge of Frank W. Silkman.

THE H. W. JOHNS-MANVILLE CO. ENLARGES ITS PLANTS IN WISCONSIN.

The H. W. Johns-Manville Co. will move its hair felt factory from Pittsburg to Milwaukee, where the company is erecting two buildings on Second street to replace the one burned last fall. The dimensions of the new structures are 150x150 and 50x150, both six stories in height. The H. W. Johns-Manville Co. is also building an addition to its Menomonie Valley (Wis.) works, 300x150 feet in ground dimensions and three stories in height. The improvements in Milwaukee and in the Valley will enable the company to put 300 to 400 additional employes at work.

NEW ADDITION TO PLANT COMPLETED.

The Beaton & Corbin Manufacturing Company, of Southington, Conn., has recently completed the erec-

tion of a new addition to that part of its factory in which its plating department is housed. The addition of facilities provided and new equipment installed will increase the company's output very materially; its present capacity is six thousand floor and ceiling plates per day. The growth of this company, which enjoys the distinction of being one of the pioneers in the manufacture of cast grey iron floor and ceiling plates, has been steady and rapid. It has added to its plant nearly every year until it is now more than twice its original size; the addition to its equipment has been still greater and its working force has grown from seven men five years ago to about forty at present.

ERECTING NEW BUILDING FOR PLUMBING SUPPLY BUSINESS IN PROVIDENCE.

Edward T. Davis, owner of the New England Plumbing Supply Co., of Springfield, Mass., has signed a contract for the erection of a building in Providence, R. I., next door to the six-story building he built about two years ago on West Exchange street. He has leased this two-year-old building to a party, who is to occupy the whole of the building, necessitating the removal to some other location of the Providence Supply Co., which Mr. Davis is interested in. The Providence Plumbing .Supply Co. will move into the new building which will be much larger than the one it is now occupying, and it will have the same railroad facilities as the old building. Mr. Davis has found that it is necessary today to do business that he must be located on the railroad as cartage expense has been increased to a great extent the last year. The new building will be of heavier construction and will have all the modern improvements for the handling of the plumbing supplies at the least possible expense. After the Providence Plumbing Supply Co. is located in its new building it will have one of the finest jobbing houses in New England. The contract states that the building must be completed by October 1, 1909..

WILL MAKE PLUMBING SPECIALTIES.

The Excelsior Brass & Iron Company, of New York City, has been incorporated to manufacture castings for all kinds of plumbing specialties and also portable needle shower baths under the S. J. Jackson patent. The new company has secured space in the building at First avenue and 124th street. J. J. McCarthy, for many years conducting a plumbing establishment on Lexington avenue, New York, is president of the company and S. J. Jackson is general manager.

DECLARE QUARTERLY DIVIDEND.

Directors of the American Radiator Company have declared the regular quarterly dividend of 1¾ per cent on the preferred stock, payable August 16 to stockholders at the close of business August 7. A dividend of 1½ per cent on the common stock has also been declared, and it is payable September 30 to stockholders on record at the close of business September 21. The transfer books will be closed from September 21 to September 30, both inclusive. The dividend on the common stock is at the rate of 6 per cent annually, to which the disbursement was raised from 4 per cent at the beginning of the current fiscal year last February. The company's business for the first half of the fiscal period, ended July 31, was entirely satisfactory and a substantial gain is understood to have been made in sales compared with the corresponding period of the year preceding. Already there is talk of further increase in common stock dividends, but officials of the company characterize these rumors as premature. Business ahead is large, and liberal returns for the remaining six months of the year seem to be assured.

DISAPPOINTED IN ENGLISH PLUMBING GOODS.

R. E. Crane, of Eljer Co., Cameron, W. Va., who recently returned from a trip to Europe, reports that he had a most successful trip, having sold a large quantity of his company's products to some of the best firms in Europe. He was much surprised in Germany to see some fine brass goods but disappointed in England to note that the quality of its sanitary plumbing goods did not seem to come anywhere near the standard which England claims for all English made goods.

L. KRAUSE IN BANKRUPTCY COURT.

Louis Krause, a dealer in plumbing specialties, at 167 Avenue A and 515 East Eleventh street, New York City, has filed schedules in bankruptcy with liabilities of $25,488, consisting of secured claims $13,096, unsecured claims $10,492 and notes and bills $1,900, and with assets of $9,376, which include stock, etc. valued at $3,000 and debts due on open account at $5,419.

NEW YORK TRADE BASEBALL LEAGUE.

The results of last Saturday's games in the race for the New York Plumbing and Steam Supply Baseball League pennant follow:

American Radiator 8, Sargent 2.
Ronalds & Johnson 9, Crane 7.
Simmons 13, Cornell & Underhill 11.
Johns-Manville 9, Fairbanks 0.

There are several games in dispute, and as soon as the board renders a final decision, a correct list of the standing of the clubs will be published in these columns.

WESTERN STEAM AND PLUMBING SUPPLIES GOLF ASSOCIATION.

The Western Steam and Plumbing Supplies Golf Association held its monthly tournament on Friday, August 6, at the Exmoor Country Club, Highland Park, near Chicago, with about twenty members in attendance. These are the pairings in which the contestants teed off in the qualifying round, together with their scores:

C. K. Foster, Chicago	47
W. H. Thayer, Boston	42
Geo. F. Hughson, Chicago	43
John D. Hibbard, Chicago	42
A. T. Kellogg, Kewanee, Ill	55
D. E. McCabe, Chicago	50
H. E. Keeler, Chicago	67
Paul Blatchford, Chicago	43
F. D. Keeler, Chicago	42
J. W. Watson, Chicago	51
R. B. Flershem, Chicago	54
J. P. Dugger, Chicago	52

H. M. Sedgwick, Chicago..... 56
A. K. Root, Chicago 52
Geo. E. Downe, Chicago..... 53
J. F. Tuttle, Chicago..... 53
E. A. Stark, Chicago..... 67
E. Buehler, Chicago..... 56

Four flights were played with the following results: First Flight—F. D. Keeler beat W. H. Thayer 2 up, John D. Hibbard beat Paul Blatchford 1 up. In the finals F. D. Keeler beat John D. Hibbard 4 up.

Second Flight.—C. K. Foster beat Geo. F. Hughson 1 up, D. E. McCabe beat A. K. Root 2 up. In the finals C. K. Foster beat D. E. McCabe 6 up.

Third Flight—J. F. Tuttle beat R. B. Flershem 4 up, J. W. Watson beat J. P. Dugger 4 up. In the finals J. W. Watson beat J. F. Tuttle 8 up.

Fourth Flight.—Geo. E. Downe beat H. M. Sedgwick and A. T. Kellogg 1 up, and E. Buehler beat H. E. Keeler and E. A. Star 1 up in 10 holes. In the finals Geo. E. Downe beat E. Buehler 4 up.

After the qualifying round a luncheon was served at the club house, and after the tournament in the afternoon a very elaborate banquet was enjoyed also at the Exmoor Clubhouse.

HOW CORPORATIONS ARE AFFECTED BY NEW TARIFF.

Many of the leading industries of the country will revise their price basis as a result of the new tariff regulations. According to a circular which Hornblower & Weeks have issued this week, the following are the most important changes: The United States Steel Corporation, Republic Iron & Steel Company, Jones & Laughlin, Bethlehem Steel Company, Sloss-Sheffield Steel & Iron Company, Carnegie Steel Company, American Car & Foundry Company, American Locomotive Company, Railway Steel Spring Company, Pressed Steel Car Company and the U. S. Cast Iron Pipe Company will be affected by the reduction in iron ore from 40 cents per ton to 15 cents per ton, bar iron from $1.20 to $1 per ton, pig iron from $4 to $2.50 per ton, scrap iron from $4 to $1 per ton, steel rails from $7.70 to $3.35 per ton, structural steel from $11 to 45 per cent per ton. International Harvester Company, manufacturer of agricultural implements, by a reduction from 20 to 15 per cent; American Locomotive Company and U. S. Rubber Company and Rubber Goods Manufacturing Company, affected by the automobile business, an increase fom 45 to 50 per cent; all soft coalers, Norfolk & Western, Chesapeake & Ohio, Louisville & Nashville, Southern railway, Chicago & Eastern Illinois, etc., affected by the increase from 67 cents per ton to 45 cents in bituminous coal; Swift & Co., Armour & Co., Cudahy & Co., Morris & Co., American Hide & Leather Company, U. S. Leather Company, United Shoe Machinery Company, by revised rates, hides from 15 per cent to free, band and sole leather from 20 per cent to 5 per cent, boots and shoes from 25 to 10 per cent; all packers by reduction from 2 cents per pound to 1½ per pound; Mergenthaler Linotype Company, manufacturers of linotype machines, reduction from 45 to 25 per cent; American Sugar Company, dealers in sugar, unchanged rates except Philippine sugar free.

METAL MARKET SHOWS MARKED IMPROVEMENT

Sales of Iron increase and many inquiries are made for prices on foreign material on which tariff is reduced.

Copper Market in better shape than at any time since panic.

IRON INDUSTRY HIGHLY SATISFACTORY.

Cleveland, O.—The condition of the iron trade continues highly satisfactory. The first week under the new tariff gives little evidence of that measure's affecting the trade in iron and steel products to any important extent this year, although there is much more inquiry for prices on foreign materials on which duties have been reduced, and English iron has advanced, says The Iron Trade Review. A decided increase in steel-making iron has been a feature of the pig iron market in the central west. Sales in the Pittsburg district have amounted to 25,000 tons, while inquiries foot up about 150,000 tons. The Republic Iron & Steel company bought 15,000 tons of Bessemer for prompt shipment at $16, and a Youngstown company which was in the market for 25,000 tons succeeded in getting only 15,000 tons of Bessemer for last half delivery at $16 Valley.

THE COPPER SITUATION.

A substantial improvement in the copper metal trade has taken place during the week. For some months past and, in fact, ever since the panic of October, 1907, the copper metal market has been very unsatisfactory to the producers. A turn for the better is believed now to have occurred. There was heavy buying of the metal this week by domestic consumers, the brass and electrical manufacturers having been the largest purchasers. This demand had the effect of stimulating prices and was due to the decided improvement that has taken place in the brass and electrical industries. The trouble has not been on account of a lack of demand on the part of consumers but owing to the fact that the production has been greater than ever before in the history of the trade and has greatly exceeded consumption. Prices have been low, but producers have been enabled to make a reasonable profit, otherwise they would have shut down their mines. The outlook for the trade at present is very much brighter. The consumption of copper has been increasing and the prospects are that it will continue to gain. The metal is now being used in the most remote corners of the world and on a larger scale than ever before. Copper consuming industries are being established everywhere. The electrical development in Asia, for example, will take a goodly percentage of the world's output. Accord-

ing to the daily consular reports electric lighting plants are being established at Karin and Soochow. Contracts have been let for the electric lighting of Mukden. Electrical enterprises are to be promoted on a large scale in Turkey. Jerusalem is to be lighted with electricity. An electric street railway is to be built from Jerusalem to Jaffa. Damascus now has an electric railway and an electric-lighting plant. The various electrical companies of this country, which are the largest consumers of copper, report a decided expansion in business. The report of the Westinghouse Electric & Manufacturing Company, issued this week, reflects the financial stress experienced by the company during the year ended March 31, but President George Westinghouse states that the outlook indicates that the full capacity of the various works will soon be required to meet the demands of business. Other electrical companies report similar improvement.

NEW RULES OF METAL EXCHANGE AFFECT COPPER.

New York, N. Y.—The new rules of the New York Metal Exchange provide that the minimum quantity of standard copper to be dealt in shall be 25 tons of 2,240 pounds each at which all bids for and offers to sell shall be made, or the multiples thereof. Sellers have the option of delivering each 25 tons in four classes, the classifications being based upon the per cent of assay and subject to a rebate or premium on the contract price accordingly. The commissions will be $1 per ton for each ton bought by or sold when the transaction is made for a party not a member of the exchange; 50 cents per ton when the transaction is made for a member of the exchange, but carried in the name of a member making the transaction; 25 cents per ton when the transaction is made for a member of the exchange and his name is given up and accepted on the day the transaction is made, and 12½ cents per ton for receiving and delivering the same. Copper stored in warehouse at the port of New York will be good delivery and also the negotiable receipts of the following refineries, such receipts to contain a clause, lighterage free to New York, Raritan Copper Works, Perth Amboy Works of the American Smelting and Refining Company, Nicholas Copper Company, Baldebach Smelting & Refining Company, and the U. S. Refining Company.

NEW YORK METAL MARKET, AUGUST 10.

Copper, Prime, Lake	$13.50
Copper, Electrolytic	13.10
Antimony, Cookson's	8.50
Lead	4.35
Straits Tin	29.60
Spelter	5.75

CHICAGO IRON MARKET, AUGUST 12.

Southern, No. 2 Foundry	$16.85-17.35
Northern, No. 2 Foundry	17.00-17.50
Lake Superior Charcoal	19.50-20.00

August 12, 1909:

Foundry iron was the same price as the week previous
50c less per ton than the year previous
Copper was ¼c more than the month previous
½c more than the year previous

CHICAGO OLD METAL MARKET.

Chicago, Ill.—Dealers' buying prices are as follows:

Clean heavy copper and wire	$12.00
Light copper	10.75
Heavy composition	11.00
Heavy yellow brass	8.50
Light brass	6.25
Heavy lead	4.00
Tea lead	3.50
Scrap zinc	4.00
Block tin pipe	24.00

NEW YORK OLD METAL MARKET.

New York.—Dealers' buying prices are as follows:

Heavy crucibled copper	$11.75 to	12.00
Heavy copper wire	11.25	11.50
Light copper	10.00	10.50
Plumbers' cocks and faucets	9.00	9.50
Heavy brass	8.25	8.50
Solder joints	6.25	6.50
Heavy lead	4.00	4.10
Tea lead	3.75	3.85

PERSONAL MENTION

E. F. Oelschlaeger, of the Rolf-Martin Company, of Ft. Wayne, Ind., was in Chicago this week calling on the trade.

Professor R. C. Carpenter, of Cornell University, Ithaca, N. Y., was in Chicago last week attending the annual meeting of the American Society of Automobile Engineers.

Otto Biefield, of Watertown, Wis., a well-known plumber, celebrated his silver wedding anniversary last week. Mr. Biefield was born in Saxony, July 6, 1861, came to this country in 1883, and since that time has been engaged in the plumbing business in Watertown.

W. M. Weatherly, of Greensboro, N. C., who resigned from his position as plumbing inspector in that city three months ago, on account of ill health, is now much improved and expects soon to be fully recovered. Mr. Weatherly served his city as plumbing inspector for five years and did much to raise the standard of plumbing there during his incumbency of office.

SIX PUBLIC COMFORT STATIONS FOR LOS ANGELES.

Los Angeles, Cal.—The Board of Park Commissioners of this city has approved the plans of architects Hunt, Enger & Burns, for the erection of six public comfort stations in the various parks and a notice for bids is being prepared; two will be built in Hollenbeck Park, one 18x33 feet, and one 18x24 feet; two will be built in Echo Pork, one 18x33 feet, and one 18x28 feet; one in Sycamore Grove Park 18.6x33.6 feet, and one in Eastlake Park, 18x24 feet. With an exception of the one in Sycamore Grove Park, which will be faced with cobble-stones, all will be of brick constructions with cement plaster exteriors, and have mission tile roofing, steel lintels cement floors and contain in all 50 water closets, 26 urinals and 13 lavatories. Each building will be wired for electricity and they will be built on concrete foundations and have a very substantial appearance.

ASSOCIATION NEWS

Master Plumbers' Picnic Season in Full Swing

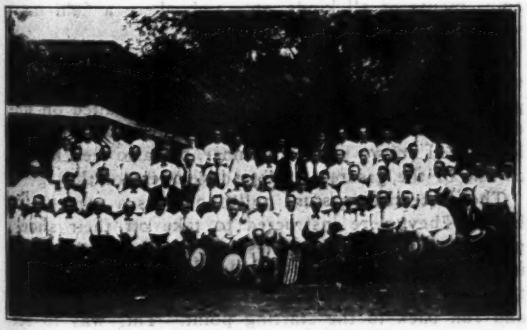
ST. LOUIS MASTER PLUMBERS HOLD ANNUAL PICNIC.

St. Louis, Mo.—The master plumbers of this city held their twenty-sixth annual picnic and excursion on Saturday, Aug. 7. With themselves, families and friends they numbered over five hundred and the happy crowd set sail on the Steamer City of Providence, winding their way up the Mississippi for twenty-eight miles, finally landing at Belle Isle, where they found everything in readiness for the day's pleasure.

On the way up the orchestra played almost continually and nearly everybody found an opportunity for dancing with their wives or sweethearts. While on the upper deck a colored quartette imported from the land of "Dixie" especially for this occasion, rendered the old-time airs which are so dear to southern hearts.

After the landing the tables were loaded down with a bounteous repast in which could be found all of the 57 varieties and then some. After the inner man had been satisfied the little ones were formed in a double line and each child was given a large American flag and as the band struck up "Dixie," they marched around the grounds making a very pretty sight.

The games were then started and the first was a 25-yard dash for boys, the first two winning fine prizes. A 25-yard race for girls under 14 was next on the programme. Then came the fat men's race (200 pounds or over). The official time was not given but Aug. Meyer was the winner, getting a water heater; 2nd prize, shaving mirror, P. Maloney; 3rd prize, a vise, was won by A. L. Kiel. The single ladies then made a 100-yard dash, while the master plumbers pulled off a 100-yard event immediately afterward. The first prize, a bath tub, was won by J. Sheehan, Jr.; 2nd prize, a lavatory, was won by F. Bellm.

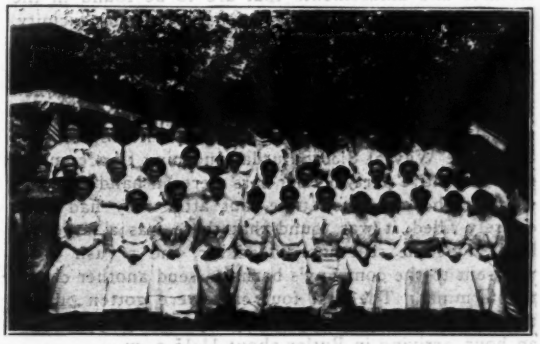


Master plumbers of St. Louis Mo., at their twenty-sixth annual outing held at Belle Isle, on Saturday, August 7, 1909.

To the delight of all, the wives of the members had a 50-yard dash and Mrs. G. T. Meyer won the porcelain enameled iron sink. Mrs. H. J. Mersmann was second, getting a low-down enameled tank. Mrs. Kilpatrick was third, drawing a portable lamp, while Mrs. A. Putting came in fourth and secured a closet seat.

Other features of the afternoon's sports were a sack race for boys and a potato race for girls, the supply men's 100-yard dash and last, but not least, the married ladies had a 50-yard dash which was won by Mrs. L. Carroll, with Mrs. Kilcunn a good second.

At six-thirty the boat weighed anchor and was headed up stream for a moonlight ride. On the way back a grand prize waltz for master plumbers only was held and Steve Gilmore came out victorious. For his partner he had Miss M. Brady, who deserves equal praise.



Ladies attending the twenty-sixth annual outing of the Master Plumbers' Association of St. Lou.s, Mo., held at Belle Isle, on Saturday, August 7, 1909.

The boat made its landing at the foot of Olive street at 11 p. m., and after enjoying that beautiful moonlight ride back everyone pronounced the 26th annual picnic the "best ever."

John A. Peters, general manager of the Abingdon Seat and Tank Manufacturing Company and J. A. Jackson, its St. Louis representative, were members of the party.

A. R. Gilmore, representing the Monarch Brass Co., of Cleveland, was there with a smile and glad hand for all of his old friends.

The H. Mueller Mfg. Company, of Decatur, Ill., always noted for being among the first, had their able and well-liked representative there in the person of Tom F. Leary.

Wm. Stamm, president of the National Plumbing Supply Company, was not discovered among the party until they arrived at the grounds, and it remained for the eagle eye of John McCormick to discover that Mr. Stamm's private yacht had conveyed him to the picnic grounds.

S. C. Crawford.

PITTSBURGH MASTER PLUMBERS ENJOY ANNUAL PICNIC.

Pittsburgh, Pa.—The number of master plumbers belonging to the Master Plumbers' Association of Pittsburgh and vicinity who attended the annual basket picnic and outing this year was not nearly as large as has been the attendance in past years, as there were only about one hundred members in attendance, but the enthusiasm shown was fully as great as when the attendance has been twice or three times as large. Those who attended seemed to enjoy an excellent time.

The outing this year was held on Saturday, August 7th, at Alameda Park, a short distance from Butler, Pa. The grove is one of the prettiest in Western Pennsylvania, and is well known as the "Grove of the Thousand Trees." While small, it has nearly all the features and amusements that are to be found in the leading picnic and amusement parks in this vicinity.

The committee in charge of the outing had arranged with the Pittsburg & Butler Street Railway Company, which operates a fast interurban electric line between Pittsburgh and Butler, to have a sufficient number of special Pullman cars at the siding at Fifth street and Duquesne Way at 8:30 Saturday morning to accommodate the entire party. Four cars were on hand ready to start at the appointed time, but after they had been entirely filled, it was found that there was a large car load of people still unprovided for, and a rush order was sent to the company's barns to send another car to the terminal. The first four cars were gotten out on time, but the remainder of the party was delayed about an hour, arriving in Butler about 11:15 a. m.

The first cars were run directly to the park, where a base ball game between the Pittsburgh Plumbing Inspectors and a picked nine of the base ball experts of the local association had been scheduled. This game had to be called off however on account of the failure of the plumbing inspectors to put in an appearance. The plumbing censors are not to be blamed for this non-appearance, however, as it was beyond their power to arrive in time to participate in defeat by the crack master plumbers. Genial J. Christ Godfrey, always ready and willing to do anyone a good turn, had invited the inspectors to make the trip from Pittsburgh to the picnic grounds in his large automobile delivery truck, an invitation which they readily accepted (to their sorrow later). He also invited a few of his friends engaged in the business "just to make a full load." When the truck started all were in the best of spirits, and continued in this frame of mind until near Bakerstown, Pa., when **something unknown happened,** and that truck refused to budge an inch excepting backwards down the famous Bakerstown hill, which inclines toward Pittsburgh. Chris. worked, tinkered and experimented for several hours, but that truck decided it would rather carry a load of plumbing fixtures than a bunch of the fellows that say such fixtures are defective, or have not been installed properly. At any rate, it was getting even for fancied wrongs. It was whispered, but later found to have been utterly without foundation, that Chris. Godfrey had been compelled to tear out some work and install it according to the whims of these same "eagle eyes," and that this was his way of getting back at them. An inspection of the records show that none of J. C. Godfrey's work had ever been condemned, so this could not possibly have been the motive.

Well, after waiting for several hours, a pair of the inspectors decided to **"mount shank's mare"** and start for the car line under the boiling sun. It was only three miles distant, and over the finest dusty roads in Butler and Allegheny counties. **They arrived at the picnic all right—some time.** We do not dare say when, but it was almost time to start back to Pittsburgh. Others scouted around and found rigs to drive over to the car line, and they also arrived. Some of them reached the picnic grounds, and some remained in Butler until the cars came in on the way home. All claim that they had a fine time at the picnic. We are not mentioning any of the plumbing inspectors' names, but only because Inspectors Bob Morris, W. A. Cable, Charles K. Smith, and a few others connected with the bureau, and S. M. Dick, Thomas F. Scanlon, Robert Henderson, E. W. Hesser, Fred Matter, Frank Fleishel and one or two well known plumbing and heating contractors, all of whom were aboard the truck, tried to work in a little free advertising, and gain some easy publicity.

About twelve o'clock, special cars left the park to take those who had not taken baskets back to Butler, where there are both good and bad hotels. Here the hungry ones were to be fed, and the committee had very thoughtfully made arrangements and appointed **official headquarters for dinner and supper** at the New Monroe. Nearly the entire party dined at this hostelry and at the famous Nixon, and all enjoyed a hearty meal. That is, all who had already arrived, for it will be remembered that there was still a car (automobile) load of picnickers still on the way.

After dinner the party again started for the park, where dancing was to continue through the afternoon, where there was boating, roller skating, vaudeville, amusements of all kinds, etc., and where a field meet was to be held by the association.

The field sports drew the greater part of the crowd to the base ball grounds, and all of the events had a good field of entries. These sports were pulled off under the personal direction of Prof. Thomas F. Scanlon, a well known master plumber, but also well known as one of the greatest athlete developers of the age.

The first athletic stunt pulled off was a contest for boys. They were instructed to take off their shoes, place them at Tom Scanlon's feet and go to the starting line, fifty yards away. They were then to run to the pile of shoes, disintegrate their own, put them on, and run back to the starting point. This was to see which boy could hear a fire alarm in the middle of the night and get sufficient coverings on to run to the blaze if only a few blocks away in time to get in the road of the firemen. The lad that could do that was to receive a pearl-handled pocket knife. Well, Edward Rowbottom won that distinction, and also the knife. He wasn't the quickest to reach his shoes, but he knew how to get them on in a hurry after he did reach them, and he also knew how to run after he did get them on. And that is why he is today a hero in the eyes of his fellow contestants in the race.

Event Number Two was a one-hundred-yard straight-

away race for members of the association. They were all to start even, and the first to reach a valuable plumbers' accessory (a silk umbrella) was to be declared the winner and owner of the coveted fixture. Messrs. Teckmeyer, Deeley, Ackley, Larkins and McKenna were the gentlemen who dmonstrated that they were in need of a rain protector, and entered the contest. It was close for about seventy-five yards, when Harry Teckmeyer started to show the rest of the runners and the spectators that he needed it worse than any of the others, and at the conclusion of the race had firm hold on the rainstick. Some say this rainstick was a stick-pin, and others say it was a stick-pin in the shape of a rainstick, but we will let it go at that. If anyone has any doubts about the matter, just ask the owner.

The next event was a ladies' base ball throwing contest, in which to win it was necessary that the ball be caught before touching the ground. Experts were stationed in a circle around the contestants, for is it not a well known fact that a woman seldom throws a ball in the direction in which she is looking? This was positively demonstrated in this contest. We will not, out of fairness to the fair sex, give the list of entries in "Domestic Engineering," although several of the other trade correspondents present advised the writer that they were going to announce these names. Mrs. John Lubin was the winner, throwing the ball eighty-three feet and three inches.

In Event Number Four, the men were given an opportunity to show how much farther they could throw the same ball. Our old friend Ott was easily the winner, firing the sphere a distance of 125 yards straight into the hands of J. J. Griffin, the crack catcher of the Allegheny Master Plumbers' base ball team. Each received a pair of gold cuff links for his feat, Mr. Ott taking his choice, and Mr. Griffin what remained.

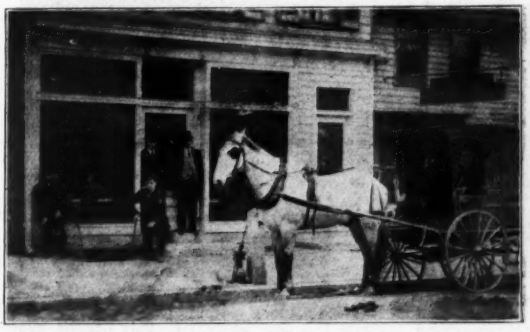
Event Number Five raised a thousand laughs in that "Grove of a Thousand Trees." It was a sack race for men. There were many who desired to enter, but only four who had the nerve. These were Messrs. Teckmeyer, Griffin, W. Ackley and Mertz. The sacks were tied around their waists, confining their feet, and the toad-like looking contest was started. William Ackley demonstrated, after a close contest, that he could do the kangaroo act better than his competitors for plumbing contracts, and won out. He was closely followed by Griffin. Teckmeyer found that he was a little too long to have part of the separated end of his body fastened together, and losing his equilib. near the finish, started straight through for China. He had no transportation farther than the first stop, Old Mother Earth, however, and was forced to stop there. The consolation for much hard work in this event was a fine silk umbrella.

Promoter Scanlon then announced that the next contest would be **a lobster race,** and his announcement was taken as a joke. When he called for entries, many became indignant, disclaiming the fact that there were any lobsters present. T. F. knew what he was doing, though, and just to get back at some of the hot-headed ones, offered to bet that he could find at least one lobster. He finally produced a field of starters, and placing them on the starting line, instructed them to run backwards to the finish line, where the winner would be awarded a prize. It is a known trait of the lobster that he moves backward, and it is also known that the contestants also resembled in several respects that popular dainty that is served à la Newburg at fabulous prices per portion in popular and high priced cafés. Harry Teckmeyer determined that he might as well go the limit and be a real lobster if the joke was on him, put forth the best efforts, crossed the line first and then continued lobster-like many yards beyond, as though expecting something to come his way. He was handed a large package, which, when shorn of its coverings, revealed a fine red specimen of the broiled lobster. It was a real one, too.

The final number on the athletic stunt menu was a fifty-yard race for small girls. A score or more wanted the large box of candy that was offered the winner, but Ellen Raehn had her eyes on that white package from the time she started, and easily captured it. Little Kathleen Sullivan, who was second, received a cash prize for her efforts, and immediately started to buy herself some candy too.

The base ball game between the Allegheny Master Plumbers and the Pittsburg Master Plumbers was then called, and Frank E. Price, local manager of the McCrum-Howell Company, was called upon to officiate as referee. He did his best, poor fellow, but soon found that, instead of being one referee, he was one of the contestants in a grand old free-for-all, and the defendant single-handed against an angry horde of eighteen stockily built ball players, each of whom had blood in his eye, and was anxious to also put blood on his hands and on the battlefield.

The Allegheny team was composed of Messrs. F. Ackley, McKenna, Tate, Rowbottom, H. Ackley, Teckmeyer, W. Ackley, Griffin and Mertz while the Pittsburg team lined up with Hays, Menore, Blume, Schutte, Regan, Larkins, Wilhere Hamilton and Archibald. Nine men were playing against nine at the beginning of the game, which was to have continued for seven innings on account of the lateness of the starting hour. But after the beginning of the third inning, it was found that the united forces of both teams, or eighteen men, would be necessary to undo the wrongs done both sides during the first two innings, and the game was forgotten for the day. It stood at the beginning of the real



McMullen Bros.' plumbing and heating establishment at Bristol, Pa. One of their show windows is devoted to the display of plumbing goods and the other to heating supplies.

battle, five to three in favor of the Allegheny team, and then all attention was devoted to the cause of all the trouble. It is but just to say that on that field Frank stood his ground like the man he is. That he stood in one place just as long as the onslaught of eighteen men would permit him to. Then he wisely moved, and he moved readily to the spot where his flying body met with the least resistance. He had no trouble moving, and finally moved clear off the field. He imposed no fines for back talk, and didn't dare order any one off the field, or to the benches. When asked if he was going to give a decision as to who should receive the game, he glanced carefully into the many beautiful eyes on all sides of him, saw that it was impossible to make a quick getaway in any direction, and announced that there would be no decision. He knew that there were some good contracts for boilers and radiation to be awarded this week, and that if he were not in shape to be on the spot and secure his share, the Uniontown plant of his company would become so overstocked that it would be necessary to close down at least a portion of it pending his recovery. And thus ended the ball game, and also the career of one Frank E. Price as umpire.

It was then time for supper and those who had not prepared to eat the evening meal in the park started for Butler, after which the special cars were again boarded, and the entire party started on the return trip to Pittsburgh, after having thoroughly enjoyed every minute of the day.

The committee in charge of the arrangements for the picnic was composed of Messrs. D. G. Deeley, chairman; E. T. Flannigan, Mack Snively, Thomas F. Scanlon and O. R. Cratty. They deserve a great deal of credit for the excellent time planned, and also for the admirable way everything excepting the base ball game was carried out, and the way a certain automobile truck acted while enroute to Butler.

When Umpire Feaster almost lost his job. Here we see Schermerhorn making the bag while Dr. Fell played first for the plumbers at the recent annual outing of the Master Plumbers' Association of Trenton, N. J.—Photograph reproduced by courtesy of the State Gazette of Trenton, N. J.

Many representatives of the manufacturers and jobbers of plumbing and heating supplies and fixtures were in evidence, among those present and seeming to enjoy themselves being the following: A. H. Krak, Thomas Boss and Fred Hillengass, of the Pittsburg Water Heater Company; A. P. Brill, R. S. Harper, C. F. Fairfield, James W. Barber and Robert B. Beitel, all of the Ruud Manufacturing Company; Frank E. Price, of the McCrum-Howell Company; J. M. Beggs, of the Sterling Specialty Company; Messrs. Jost and Rodgers, of the Fort Pitt Supply Company; Messrs. Schlernitzauer and Kincaid, of the Harris Pump & Supply Company; James Holland and Jean Auth, of the Kelly & Jones Company, and O. W. Gleason, eastern representative of the Peerless Selling Company, Evansville, Ind. Charles L. Titus, secretary of the Southwestern Master Plumbers' Association, and one of the leading plumbing contractors of Uniontown, Pa., was also a guest at the outing, having come down especially to attend.

Geo. D. Steele.

PATERSON PLUMBERS' ANNUAL OUTING.

Paterson, N. J.—Once more the master plumbers of this city journeyed to Coney Island, Saturday, August 7, being the occasion of their eighth annual outing and almost every shop in town had the lid on. There were ninety-six that boarded an Erie train at 7:30 that morning and some three dozen more joined them before the Dreamland boat left at pier on North River. After a delightful sail down the bay a landing was made at Coney Island and the merrymakers proceeded to invade Stauch's, where Louis had luncheon prepared for them. Each member and guest was then supplied with an unlimited pass to Steeplechase Park. This included everything that was not chained down with a special guide for Bob Beaumont and a squad of reserves for Asa Crookston. Bob was not in the park fifteen minutes before his combination ticket looked like a lace curtain from the punches it received. Billy Delhagen when last seen was still keeping guard at the "windy bridge."

After going through the maze of mysteries at Steeplechase the picnickers returned to Stauch's. It was then after four and they required only one invitation to the banquet hall where an army of neatly attired waiters were ready to do their duty. Louis Stauch holds a reputation for the high standard of his dinners, and excellence of service, and this one was no exception. The most delicious of viands were set before the plumbers and their guests.

After dinner the plumbers formed parties of half a dozen or more and proceeded to take a look at Coney by night. The Saturday night throng swallowed them after many minutes and it is doubtful that all saw Paterson that night.

Every one present voted it the most successful outing ever held and in point of numbers it was the best attended in the history of the association. The supply men very generously responded to the call of the committee and played no little part in making the day one of solid enjoyment.

The comittee deserve unstinted praise for the manner in which they arranged the outing. This was composed of the following gentlemen: Geo. S. O'Neil, chairman; J. Hunter White, secretary; John Baker, Robert E. Quinn, James J. Maher, Bob Beaumont and Frank Vreeland.

MANHATTAN PLUMBERS CHARTER STEAMER.

New York, N. Y.—The committee in charge of the Manhattan Master Plumbers' outing, which will be held on Thursday, September 9, have chartered the Steamboat Commodore for the day. Tickets for the outing are $5 each.

NORTH AND WEST SIDE PLUMBERS PREPARE FOR OUTING.

Chicago, Ill.—The Chicago North and West Side Master Plumbers' Pleasure Club has issued invitations to its members, their families and friends to attend its **sixth annual outing** and basket picnic **at Kolze's Grove,** Desplaines River and Irving Boulevard, near Kolze, Ill., on **Saturday, August 21.** E. J. Benning and Col. Fred J. Wagner, who are at the head of the committee in charge of the event, are making special efforts to see that everything is done to make it a day of unalloyed pleasure. The event will as usual be an all-day affair. Most members expect to reach the picnic grove by using their own buggies, surreys or automobiles, etc., while others intend to get there via the Wisconsin Central Railway.

NORTHEASTERN ASSOCIATION OF MASTER PLUMBERS ORGANIZED.

Scranton, Pa.—Master plumbers in this part of the state have formed an organization which will be incorporated under the name of the Northeastern Association of Master Plumbers of Pennsylvania for the purpose of "encouraging and protecting trade and commerce; and in accomplishing this purpose to foster, protect and promote the intelligence and influence of its members against fraud and imposition." The members of this new organization are: Richard Turner, George S. Boyle and George Bray, all of Wilkes-Barre; W. W. Lewis and George Nelson, of Pittston; George O. Webber, of Avoca; Joseph F. O'Hara, H. J. Gunster and P. H. Haggerty, of Scranton; George Lance and M. J. Egan Estate, of Jermyn; F. J. O'Boyle, of Archbald; C. O. Mellon, Edward Ryan and John Van Beck, of Carbondale.

Spencer, Ind.—The Board of Commissioners of Owen County are asking for sealed proposals for the erection of a new court house in this city, all to be let in one general contract, plumbing, heating and electric wiring. Bids will be received up to 12 o'clock noon on September 16, 1909. Plans and specifications are on file at the office of the Auditor of Owen county and in Rooms 1212 and 1213 State Life Building, Indianapolis, Ind. (J. P. Johnson & Co. are the architects.) The Spencer Plumbing Company of this city, would like to get into communication with contractors who intend to bid on this contract.

PLUMBING LEGISLATION

TRENTON'S NEW PLUMBING CODE READY FOR ADOPTION.

Trenton, N. J.—The Sanitary Committee of the Board of Health, representatives from the Master Plumbers' Association and the Journeyman Plumbers' Union met last week in the Council's chamber and reviewed the city's proposed plumbing code, with the result that the regulations are now in shape for adoption. The Master Plumbers' Association was represented by Abram Schermerhorn, John Black, Charles Whitehead and John Mackey. Plumbing Inspector George W. Feaster was also in attendance at the meeting and advised the board as to the merit of the suggested changes. When the proposed code becomes a law it will be of great importance to every resident in the city, as it will require that all plumbing shall be done in a thoroughly sanitary manner by workmen who understand the trade, and that cheap and dangerous traps and other faulty appliances shall not be used.

Louisville, Ky.—F. S. Schardein & Sons, of Sixth and Market streets, have secured the following contracts: Heating four residences for Edw. F. W. Kaiser (consideration $2,000); heating C. F. Autencamp's store and apartment building for $1,400; and G. B. James' new apartment building for $1,200.

The neatly arranged exhibit of pipe threading tools which the Threading Machine Company, of Sandusky, O., had at the recent annual convention of the National Association of Master Plumbers, at Detroit. The exhibit was in charge of Samuel Smith, whose likeness is seen in the front of the picture. The exhibit of the Peerless Selling Company, of Evansville, Ind., can be seen in the background.

The Focus of the World's Interest

(Concluded from page 181)

this is patent. It lies in the fact that they are endeavoring to lay down the products of a country where high wages prevail in competition with the products of a country where technical skill is just as high as it is in this country and wages much lower; and the result is a fierce competition which ends in loss; but in the South American countries this will not be the case; conditions will be different. Our manufacturers will then be supplying a non-manufacturing country, eager to absorb the products which we make and able to pay for them. We will have short ocean routes to off-set any difference there may be in labor, and we will have that feeling of kinship and brotherhood which is being very rapidly increased between the South and Central American countries and the United States of America.

My word to the manufacturers of the United States is:

Keep your eyes turned toward the Southern Cross.

Jno. K. Allen.

BOOK REVIEWS

Craftsman Homes, by Gustave Stickley, published by The Craftsman Publishing Company, 41 West 34th street, New York.

This is a splendidly printed and illustrated book, bound in characteristic craftsman style. It contains two hundred and five pages, every one of which is full of interest and instruction to all art loving and home loving people.

The book is a sincere and earnest presentation of plans and ideals which will enable the householder to express his thought of home in a sensible and artistic way. It is a very timely plea for individuality and honesty in houses, furnishings, grounds and gardens. And its evident aim is to free the individual from his unfortunate habit of following established customs in home-making regardless of how these customs conflict with his needs or his personal ideas of beauty.

It is true that we are more afraid to depart from the customary in our home making than in almost any other thing. We build what the architect and contractor think we should have. We furnish this building with ready-made furniture, often wholly unsuited to our needs and frequently ugly. We drape it with conventional stuffs of the mode of the day. We attempt to beautify it with bric-a-brac of a largely heterogeneous nature. Then we surround it with exceedingly meagre gardening. "Craftsman Homes" is a vigorous and successful protest against this procedure, in that it offers a practical solution of the householder's real needs.

The author begins with the house itself and uses many pages describing and illustrating houses, varying from the simple farm house and the summer cottage to large and complete houses, each one of which is original, beautiful and suited to comfortable and refined living. He then proceeds to describe and illustrate the furnishings which should suitably be placed in each sort of house. He gives details of drapery, of bric-a-brac and of furniture, as complete, and quite as interesting as are the plans of the houses. In a very important chapter he discusses the relation of the house to the garden—a discussion much needed. We have all been too neglectful of our opportunities for gardening. Mr. Stickley shows the great importance as well as the practicability of a consideration of the right relation between house and garden.

The title of the book discloses the fact that the sort of homes dealt with are strictly after the style which has been characterized as craftsman. Of course there are other sorts of domestic architecture and house furnishings (such as the English and the Colonial) with which this book does not deal, that are of great artistic value. Naturally, then, the book is not a model from which all homes should be built, but it is a book which all home lovers should possess because of its spirit of honest, sincere and refined home making.

G. M. C.

Report of the Sanitary Committee for 1907, 1908, 1909, published by the National Association of Master Plumbers of the United States. Office: 721 14th street, N. W., Washington, D. C. 86 pages 5¾x8¾ inches. Price 50 cts.

This report deals exhaustively and in a practical and scientific manner with the problem of sewer gas, giving many jolts to ancient theories and suppositions. If any one engaged in the plumbing business will read this volume carefully and without prejudice it will afford convincing proof of the progress made along the lines of investigation, and the results clearly demonstrate that much has been accomplished in dispelling wrong ideas regarding that bugaboo "sewer gas."

WITH THE MAKERS

A Modern Bath Fixture.

Ever have the man upstairs wake you up in the middle of the night by turning on the water in the bath tub so that it rumbled, roared splashed and fairly shook the house?

Ever turn on the water yourself and get scalded because it came boiling hot right from the jump?

Ever scrape or gouge yourself on the points or corners of the bath fixtures?

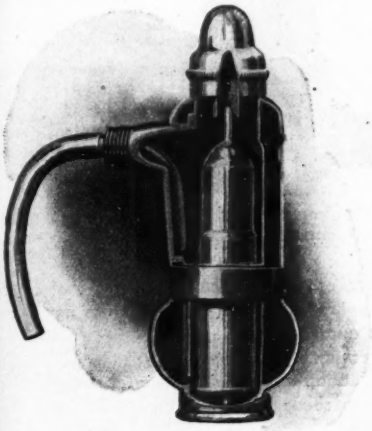
Ever have any trouble through the fixtures getting out of repair, even after you went to considerable trouble putting them in?

Well, the newest thing out does away with all these troubles and a great many other difficulties as well. They call it the "Modern" bath fixture because it combines hot and cold supply, overflow and waste. This makes it very easy to install. One handle controls both hot and cold. That sounds pretty good, doesn't it? But wait a minute. It also includes an anti-scalding valve and mixing chamber so that no one, big or little, old or young, drunk or sober, can scald himself by getting it hot all of a sudden, because the flow always comes cold first and begins to get hot only after one full turn of the handle has been made.

Now about that noise proposition. There is no rubber ball inside this fixture to work loose and rumble or roar, beside which the spout curves, diverting the stream against the end of the tub. This not only

Stocking-Up Time.

Bismarck said "In case of war with France look in the third drawer on the left." His plans were complete. Most battles either in war or commerce are fought out in advance. The dealer prepares by laying in stock and it is pertinent, therefore, at this time, to direct the attention of the Trade to the Norwall line of Valves as effective armament.



NORWALL SIPHON AIR VALVE.
Representing the uniform excellence of the Norwall line.

The dealer who directs his fire from batteries of IDEAL Boilers and AMERICAN Radiators reinforced by the small-arm support of the complete line of Norwall Air, Vacuum and Packless Radiator Valves, has the commercial battle half won. Orders are now in order.

AMERICAN RADIATORS & IDEAL BOILERS

A Heating Outfit is More Efficient with NORWALL and SYLPHON SPECIALTIES

AMERICAN RADIATOR COMPANY

General Offices, 282-286 Michigan Ave., Chicago.

New York	Cincinnati	Cleveland	Atlanta	Brantford, Ont.	Denver
Philadelphia	Boston	Milwaukee	Minneapolis	Seattle	St. Louis
Pittsburg	Buffalo	Indianapolis	Kansas City	Omaha	San Francisco
Washington					

renders it practically noiseless, but prevents splashing as well. A shampoo connection may be attached, if desired.

There is no such thing as digging a chunk of flesh out of the small of your back with this fixture, for there are no sharp points or corners, everything is gracefully rounded, and it is neat, very compact, and occupies very little space.

The overflow is so high that it permits a nice, deep bath, and it is large enough to take care of any ordinary pressure.

Talk about simplicity of construction, here it is! There is nothing complicated about this fixture and

The "Modern" Bath combined hot and cold water supply fixture.

no part of it will get out of repair under any ordinary circumstance, or with any kind of usage short of actual abuse. As all the working parts are removable through the stuffing-box opening, repairs are easily and quickly made.

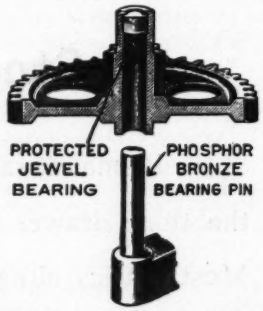
To put it all in a nutshell, here is a fixture that has combined hot and cold supply, waste and overflow, operates with one handle, prevents scalding, is practically noiseless, is neat, compact, occupies little space, has no sharp corners or points, is very easily installed, will not get out of order very readily, and is easily and quickly repaired. This is a combination hard to beat, and will appeal strongly to plumbers, owners and architects alike.

The manufacturer, the Federal-Huber Company, of Chicago and New York, will be glad to hear from you if you are interested, because they think that the more you find out about these goods the better you will like them.

Water Meters with Jewel Bearing Internal Gears.

The Buffalo Meter Co., of Buffalo, N. Y., has recently made a notable improvement in the manufacture of water meters by introducing jewel bearing intermediate or internal gears, which transmit the motion of the measuring apparatus of a water meter to its dial and perform hard service. Any improvement which thus prolongs their usefulness is to be commended and should be adopted.

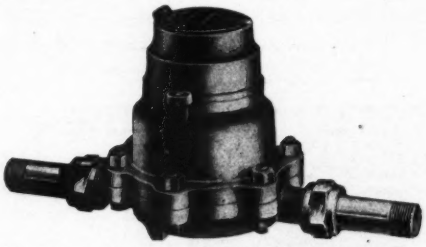
By the use of jewel bearings friction is reduced so that the meter is operated by the smallest flows and is capable of the closest adjustment. The jewels being extremely hard and protected from sand and dirt are not affected by wear and thus the sensitiveness and accuracy are maintained. Care has been exercised to



Sectional view showing jewel bearing intermediate or internal gears in New Niagara and American water meters.

select perfect jewels of strong and substantial size and to fasten each one permanently in its gear.

This construction is claimed to be a decided advance on the ordinary water meter gear trains and is used exclusively in New Niagara and American meters.



Exterior view of meter with jewel bearing intermediate gears.

These meters are extremely simple, strong and compact; they have large capacities adjustable for pressures and their outer casings and dials are varied to suit any requirement. Interested parties can obtain full particulars about these water meters from the manufacturer upon request, mentioning "Domestic Engineering."

TRADE LITERATURE

From Lindholm Metal Stamping Company, Camden, N. J.: "Grease Cups," a booklet, 8 pages 3½x6¼ inches, containing illustrations and information relative to the merits of drawn metal grease cups, stamped and drawn from heavy gauge sheet steel or brass. Sizes and list prices are quoted.

From Star Forge Company, Buffalo, N. Y.: "Illustrated Catalogue No. 37," 84 pages, 4½x7 inches, giving instructive information relative to drills, punches, countershafts test blowers, stationary forges, disc wheels, shaving fans, and many other specialties manufactured by this concern.

From **Sucro Filter Company,** 42 Broadway, New York, N. Y.: "Sucro Pure Water by Gravity Filtration," 28 pages, 7¼x9 inches, illustrated by numerous half-tones and containing some very advantageous information upon the subject of pure water. The principles of filter construction are fully described and illustrated and many useful applications of this useful article for every day life are given.

From **Hollands Manufacturing Company,** Erie Pa.: "Machinists' Vises and Plumbers' Tools," for 1909-10. A catalogue, 32 pages, 6x9 inches, in which various vises useful to the trade are fully illustrated and described, one in particular for holding brass and nickel pipe being especially noticeable. A full line of pipe cutters, stocks and dies, taps, reamers and many other specialties made by this concern are shown and list prices furnished.

From **Central Radiator Company,** 37 Wall street, New York, N. Y.: A booklet, "Central Steam and Water Radiators," 3¼x5¾ inches, containing information relative to the slip nipple type of radiators manufactured by this company. Sizes, dimensions and list price per foot of the various types made are given. Wall radiators also for steam or hot water are shown and described and prices are quoted on radiator brackets for supporting radiators without feet.

From **H. Mueller Manufacturing Company,** Decatur, Ill.—The "Tool Book," illustrated, 92 pages, 5¼x7½ inches. The idea in bringing out many of these tools seems to have been to combine the best thoughts of the craftsman with those of the engineer and the superintendent to produce the many special tools made by this concern and bearing such general excellence as is worthy to be found under the trade mark of this concern. When writing for this catalogue do not forget to mention "Domestic Engineering."

From **Wade Iron Sanitary Manufacturing Company,** 43 East Harrison street, Chicago, Ill: "Wade Back Water Gate Valves and House Drainage, Sewer Flushing Fittings," a catalogue, 84 pages, 3⅞x7⅞ inches, giving list prices, dimensions, illustrations and descriptions of the various accessible flushing clean-out house drainage fittings, accessible flushing clean-out sewage and tidal back water gate valve appliances, iron accessible flushing clean-out catch basins for grease, and many other specialties manufactured by this concern, together with useful information relative to this company's accessible flushing clean-out sewer system. Kindly mention "Domestic Engineering" when writing for this catalogue.

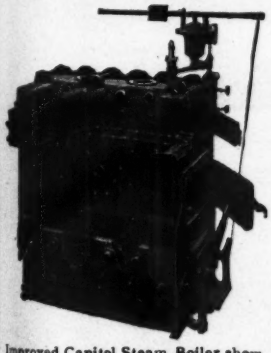
THE WISHING WELL.

New D. & C. Short Story Will Be Sent You Free.

A school teacher goes to Mackinac on a D. & C. line steamer, a young business man from New York goes on the same boat, and they meet. Then, at Mackinac, a wishing well furnishes the scenic setting for a most interesting story. You will enjoy reading it. Send your name and address to Detroit & Cleveland Nav. Co., Dept. E., Detroit, Mich.—Adv.

CAPITOL BOILERS AND RADIATORS

The Tissue Paper Test



Improved Capitol Steam Boiler showing construction, fire travel and waterways.

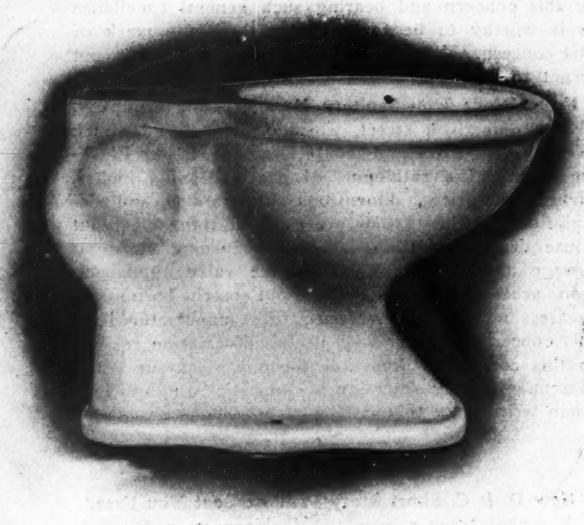
When a **Capitol Boiler** is mounted on our floor, one of the unique, yet severe tests it receives, is what is known as "the tissue paper test." This consists of filing and grinding every door until they are able to hold the tissue all the way around. "The doors of the **Capitol** certainly fit," says the observing fitter.

Did you receive copy of our new Catalog "D"?

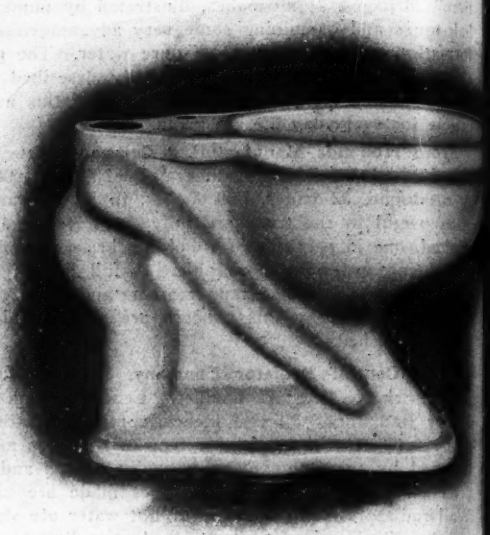
United States Heater Company.

General Offices and Works: Fort St. and Campbell Ave., DETROIT, MICH.

Branches:		Sales Agencies:
NEW YORK	129 Worth St.	NORFOLK & RICHMOND, VA., Virginia-Carolina Supply Co
CHICAGO	34 Dearborn St.	MINNEAPOLIS, MINN., Plumbing & S. F. Supplies Co.
OMAHA	916 Farnam St.	ST. LOUIS, MO., L. M. Rumsey Manufacturing Co.
DETROIT	139 Jefferson Ave.	DENVER, COLO., Kellogg & Stokes Stove Co.



CONCEALED SYPHON JET BOWL.



PLAIN SYPHON JET BOWL.

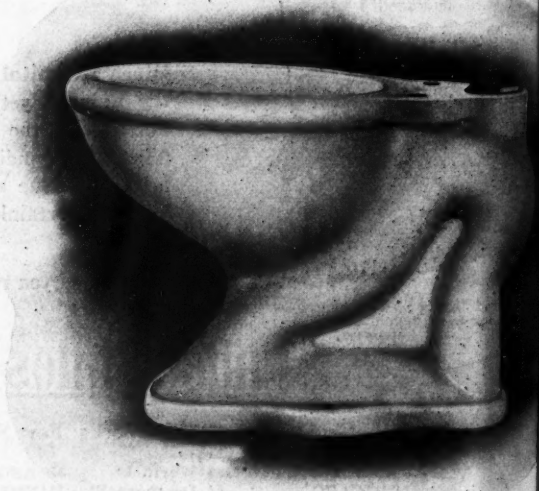
This week we show our full line of

VITREOUS CHINA BOWLS

Write for Advance Catalogue and Price List

Abingdon Seat and Tank Mfg. Co., Abingdon, Illinois

PLAIN SYPHON WASH DOWN BOWL.
With and without Jet.



REVERSE SYPHON WASH DOWN BOWL.
Top or Back Supply.

THE ADVERTISEMENTS IN DOMESTIC ENGINEERING ARE INDEXED. TURN TO PAGE XXX.